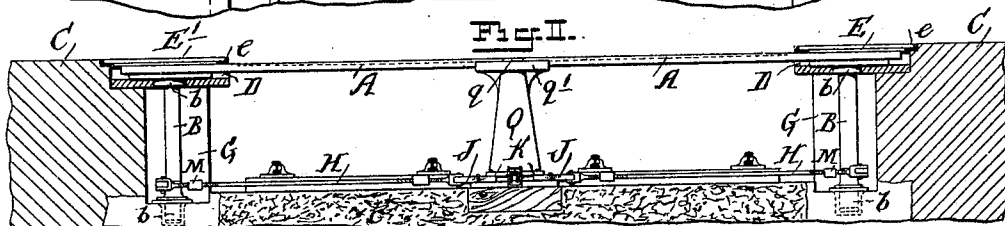
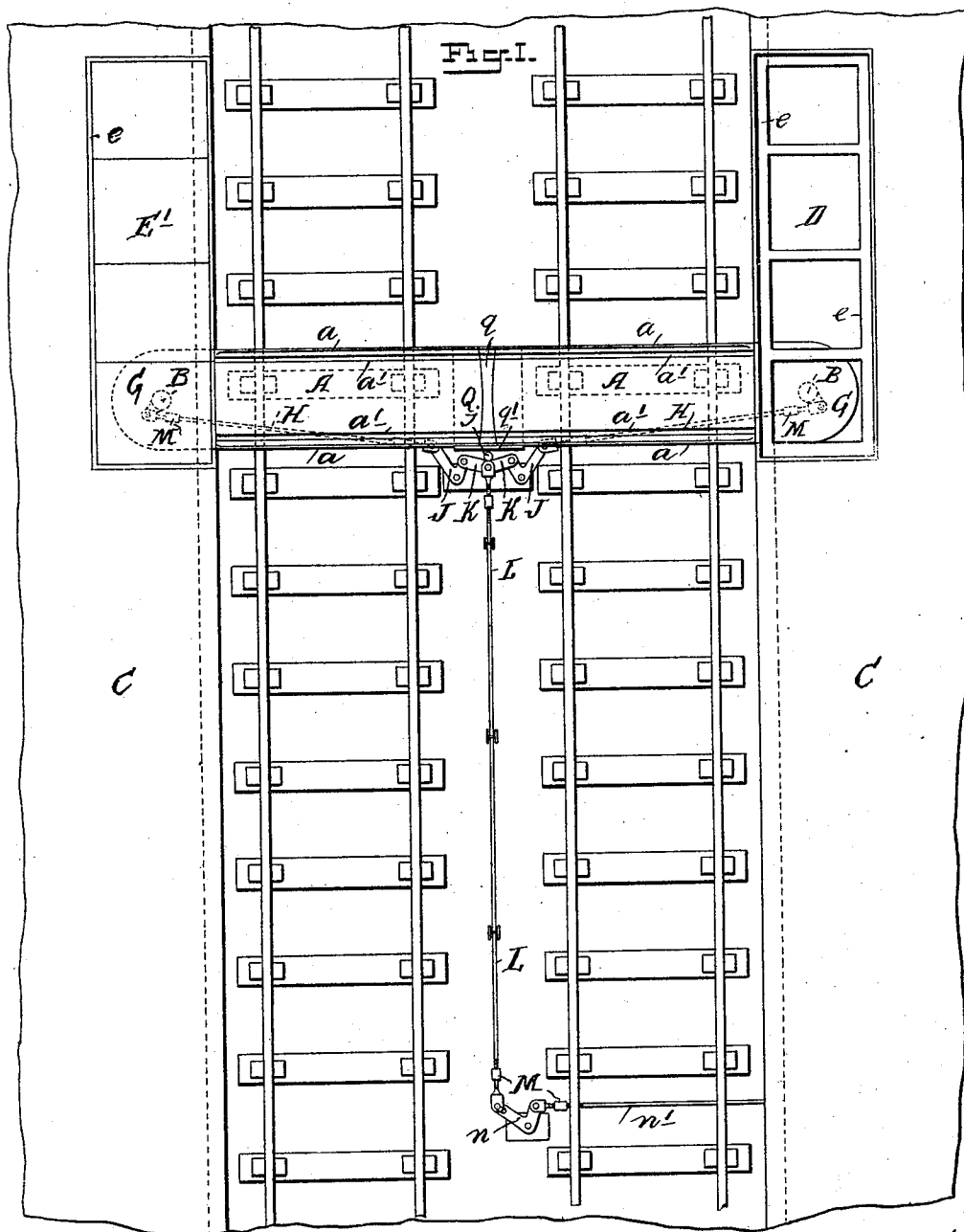


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SWING BRIDGE FOR RAILWAYS.

No. 581,468.

Patented Apr. 27, 1897.



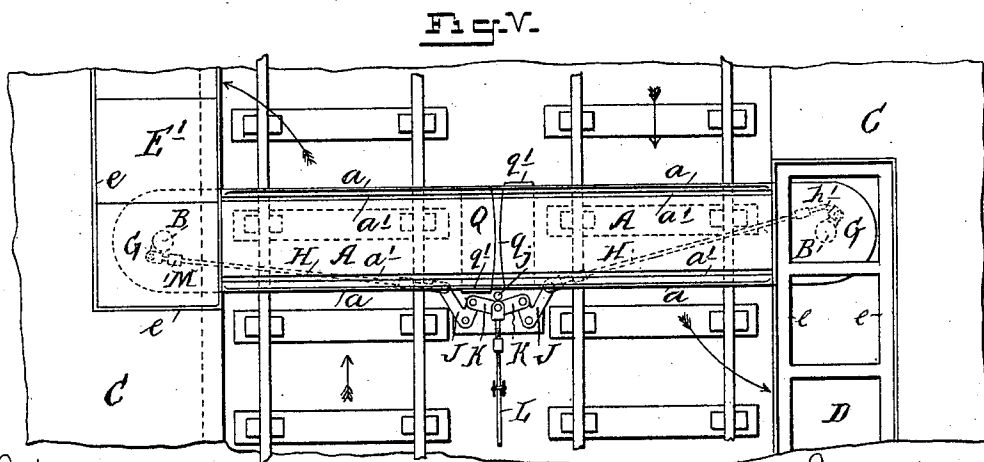
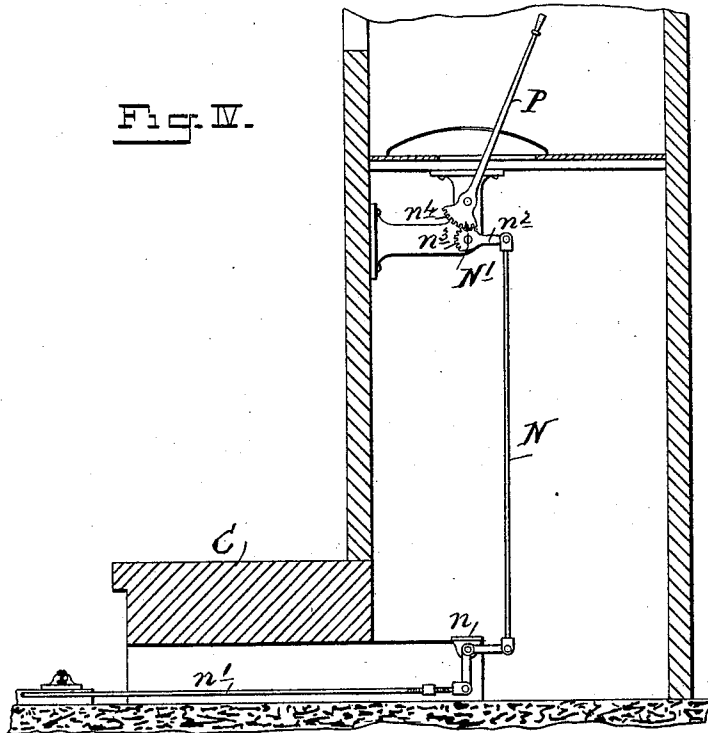
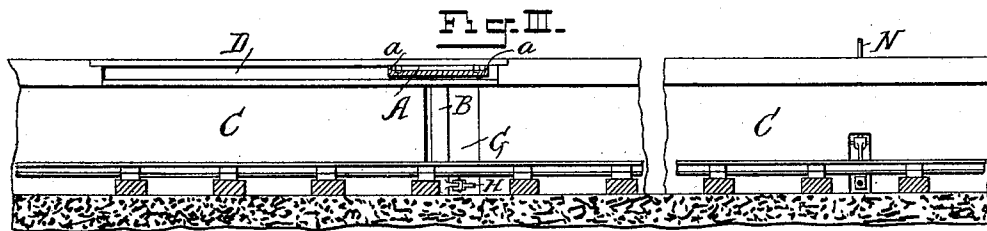
Witnesses
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John Mackenzie
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UNITED STATES PATENT OFFICE.

JOHN MACKENZIE, OF KINGUSSIE, SCOTLAND.

SWING-BRIDGE FOR RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 581,468, dated April 27, 1897.

Application filed December 31, 1895. Serial No. 573,875. (No model.) Patented in England November 16, 1895, No. 21,772, and in Germany November 27, 1895, No. 88,805.

To all whom it may concern:

Be it known that I, JOHN MACKENZIE, gentleman, of The Post Office, Kingussie, in the county of Inverness, Scotland, have invented a Swing-Bridge for Railways for Conveying Luggage, &c., from Platform to Platform, (for which I have obtained patents in Great Britain, No. 21,772, dated November 16, 1895, and in Germany, No. 88,805, dated November 27, 1895,) of which the following is a specification.

This invention relates to a swing-bridge for railways, which bridge is arranged level, or approximately so, with the platform, so that passengers' luggage, &c., can be readily wheeled or otherwise conveyed by means of the said bridge from platform to platform. By my said invention labor is saved and the transference of luggage, &c., from platform to platform is effected quickly.

Figure 1 is a plan, Fig. 2 a cross-section, and Fig. 3 a side view, of one method of carrying out my said invention, the parts being shown in the position taken by them when the bridge is in use; and Figs. 4 and 5 are detail views of modifications of the same.

I employ two swinging platforms, wings, or arms A, each of which is mounted on the top ends of upright spindles or shafts B, which work in suitable bearings b, formed in or provided in the framework of the platform C, the said bearings being preferably composed of one bottom bearing and one or more eyelet or other top bearings, which are sunk into the framework or masonry of the platform C. The said wings or arms A when in their normal position lie in recessed portions D of the platform C, said portions being provided with a metal or other sole-plate E and covered by metal or other plates E', preferably mounted in suitable frames e. The beds, floors, or sole-plates E of the said recessed portions D may also be provided with one or more friction-rollers, so as to insure of the wings or arms A being swung easily into place. The swinging of the said arms or wings A may be effected by various means, though I prefer to employ an arrangement of levers, cranks, and rods, as shown in the drawings—that is to say, I mount on the lower end of each of the upright spindles or shafts B a crank or lever arm G, to which is attached

the one end of an adjustable connecting-rod H, the other end of which is attached to the one arm of a pivoted bell-crank lever J, the other arm of which is connected to the one end of a link or arm K, the other ends of both of the said links K being connected to the main operating-rod L, which, as well as the connecting-rods H, is provided with one or more adjustable right-and-left band-screw nuts M. The bell-crank levers J may be provided with one or more stops j, so as to prevent them overreaching.

The main operating-rod L is actuated from the cabin, signal-box, or other place by means of an upright spindle or rod N, (shown in detail view, Fig. 4,) the lower end of which is connected to the end of rod L by means of bell-cranks n and adjustable rod or rods n'. The upper end of the said rod N is connected to the arm n² of a pivoted lever N', the other end n³ of which is preferably formed as a spur or toothed quadrant, into which gears a correspondingly-toothed quadrant or wheel n⁴, the spindle or shaft of which has keyed or otherwise mounted on it the operating-lever P, the said lever P being suitably connected to the interlocking frame or bar of the signal-operating mechanism, so that if line was signaled "clear" the bridge could not be used, and vice versa.

In order to support the outer ends of the wings A, I employ a central support or platform Q in the six-foot way, having one or more uprights and a central filling-in piece q. The said central support or platform has also a normal stop or flange q', and, if desired, one or more weighted or other automatically-acting catches, which come into action when the bridge is in a position across the lines.

The wings or arms A are provided with raised edges a or with sunk tracks a', or with both, so as to admit of a sure and safe run for the truck or barrow; also, they are provided with suitable means at their rear or inner ends as to enable the wheels of the barrow or truck to enter and leave the bridge easily from both platforms C. Also, if desired, automatic acting stops may be provided at the outer ends of the wings A for retaining them in their closed positions.

The whole of the foregoing cranks, rods, &c.,

may, if desired, be inclosed within suitably-covered boxes, so as to keep them clean and in good order.

As a modification I may so mount the arms
5 or wings A as to be capable of moving away from each other in opposite directions, as shown in detail plan, Fig. 5—that is to say, each wing A would move so as to close the bridge in the same direction as the train goes
10 forward on the line crossed by the respective wings A, the arrangement of the cranks and levers being as shown in Fig. 5—that is to say, I mount the crank G of the one upright spindle or shaft B of the one wing A in the reverse
15 manner to the opposite wing's crank G, and I also correspondingly lengthen the arms of the pivoted bell-crank lever J for actuating the same, or suitably bend the connecting-rod H, as shown at *h*, so as to cause the wings to move
20 in the direction of the arrows. In this case the central support Q may be provided with two normal stops and automatic catches.

As a further modification I may pivot the bridge on a fixed central support at a level
25 with the platforms, the said support being in the middle of the six-foot way, the arrangement being such that when the bridge is not required it would be swung round into a position parallel with the lines and then tilted
30 up edgewise, so as to leave as much room in the six-foot way as possible. The swinging round and tilting of the bridge may be effected by any suitable arrangement or arrangements of levers, cranks, &c.

35 Various other modifications may be employed for lifting, swinging, or tilting the

bridge wing or wings out of the way of the lines—as, for example, the bridge sides may be made collapsible or capable of being folded or tilted upward in the six-foot way by any
40 suitable means.

Various other arrangements of operating mechanism may be employed in the signal-box, cabin, or elsewhere.

If desired, I may provide means whereby
45 the approaching train causes the bridge to be opened so as to allow the train to pass.

I claim—

1. In combination with the two platforms of a railway-station arranged on opposite sides
50 of the railway-track, the two swinging platforms or wings A each pivoted at B to one platform, a fixed support Q arranged centrally between the platforms, and means for operating the swinging platforms simultaneously for moving them into engagement with
55 the central support to form a bridge across the track, substantially as set forth.

2. In a bridge, the combination of the two horizontally-swinging platforms or wings A
60 pivoted upon the upright spindles B, the cranks G on said spindles, the bell-cranks J pivoted to a stationary support, the rods H connecting bell-cranks J with cranks G, a rod L, suitable mechanism for operating rod L,
65 and the link K connecting rod L with bell-cranks J, substantially as set forth.

JNO. MACKENZIE.

Witnesses:

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