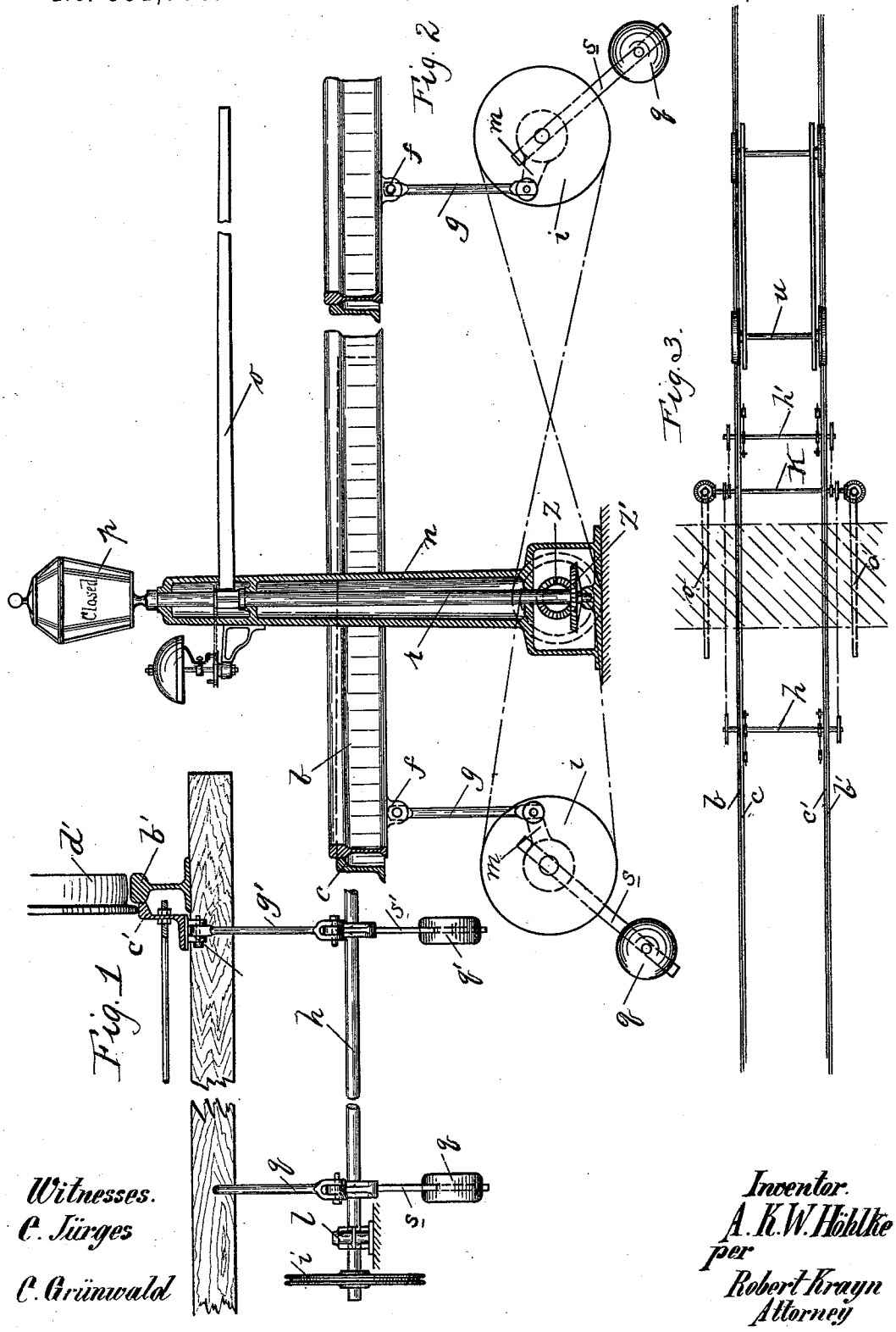
(No Model.)

A. K. W. HÖHLKE.

OPENING OR CLOSING RAILWAY BARRIERS.

No. 551,768. Patented Dec. 24, 1895.



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ARTHUR KARL WILHELM HÖHLKE, OF LÜBECK, GERMANY.

OPENING OR CLOSING RAILWAY-BARRIERS.

SPECIFICATION forming part of Letters Patent No. 551,768, dated December 24, 1895.

Application filed October 5, 1894. Serial No. 525,048. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR KARL WILHELM HÖHLKE, residing at Lübeck, in the Empire of Germany, have invented a certain new and useful Improved Device for Automatically Opening or Closing Railway-Barriers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to make and use the same.

This invention has for its object an improved railway-barrier for level crossings, which is automatically closed against persons wishing to cross on the passage of a train over the adjacent piece of track and is afterward again automatically opened. This has for its purpose to make the employment of gatekeepers unnecessary and to reduce the working expenses more particularly in the case of small and branch lines.

This improved device is shown on the accompanying drawings.

Figure 1 is a partial cross-section of the railway-track, showing an end view of the mechanism beneath it; Fig. 2, a longitudinal section; Fig. 3, a plan of a stretch of railway-track provided with the improved apparatus.

In order to render the opening and closing of the barriers dependent on the passage of a train over the adjacent piece of track, movable side rails are pressed down by the flanges of the wheels during the passage of the same over them. The movement of the side rails is communicated to a lever mechanism, which by means of multiple gearing causes the barriers to be opened or closed. The movable or oscillating side rails *c c'* are arranged by the side of the ordinary rails *b b'* at a suitable distance from the crossing which is to be closed, and are maintained in their highest position by suitable counterweights on the lever-arms of a spindle *h*.

According to the length of the side rails there is arranged on supports *l* underneath the rails a suitable number of spindles *h*, Fig. 1, carrying cranks *m*, which are pressed upward by means of levers *s* and weights *q*. On the ends of the cranks *m* there are hinged bars or links *g*, which are again connected by means of hinges *f* with the flanges of the side rails. The said rails may be suitably stiffened by means of cross-bars, (stay-bars,) Fig. 1. By this connection of the side rails with one another and with the system of levers on the spindles *h* the side rails are maintained in an oscillating position by means of the counterweights.

The flanges of the wheels *d d'*, before passing a crossing, run over the slightly-elevated yielding rails *c c'* and press these latter downward. Although the movement of the side rails is a slight one, it is transferred to the movable spindles *h h'* in such a way that by means of suitable gearing the vertical barrier-axis *r*, with barrier *o*, is turned about ninety degrees.

The opening of barrier *o*, after the train has passed the crossing, can either be brought about automatically by the pull of the weight *q* or by a like device, such as employed for closing the barriers, of course at a suitable distance from the former, which must at least be equal to the maximum length of the train.

The transfer of the movement of the side rails to the movable spindles and from these latter to the operating mechanism of the barriers may be done by means of belt-gearing or of rods.

Simultaneously with the opening and closing of the barriers a signal-lantern *p* is turned in such a way that colored disks with the words "shut" and "open" come into view. The arrangement may at the same time be such that a bell or other suitable signaling device may be caused to ring.

The transfer from the belt-pulleys to the spindle *r* of the barriers in the hollow columns *n*, Fig. 2, may take place by means of cog-wheels *z z'*, friction-rollers or other well-known devices.

A plan view of a piece of track provided with these rails is shown in Fig. 3, and a vehicle *u* is shown approaching a crossing. As it travels over the side rails the barrier is kept closed as long as the side rails *c c'* are held down. In this example the opening of the barrier and rising of the side rails are brought about by means of suitable counterweights after the carriages have left the side rails.

What I claim is—

1. The combination with the main track rails, of vertically movable rails arranged parallel with and adjacent to the track rails

and adapted to be depressed by the wheels of the cars, a horizontal shaft arranged beneath the track, levers secured at one end to the shaft, counterweights at the opposite ends of the levers, cranks also secured to the said shaft, links jointed at opposite ends to said cranks and to the vertically movable rails, a gate and its rotatable shaft, and gearing between the said first shaft and the gate shaft whereby the latter is turned when the vertically movable rails are depressed, as specified.

2. The combination with the main track rails, of vertically movable rails arranged parallel with and adjacent to the track rails and adapted to be depressed by the wheels of the cars, a horizontal shaft arranged beneath the track, levers secured at one end to the shaft, counterweights at the opposite ends of the levers, cranks also secured to the said shaft, links jointed at opposite ends to said cranks and to the vertically movable rails, a gate and its rotatable shaft, gearing between the said first shaft and the gate shaft whereby the latter is turned when the vertically movable rails are depressed and similarly arranged and constructed mechanism located at the opposite side of the crossing and adapted to be operated by the passing train for returning the gate to its normal position, as specified.

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

ARTHUR KARL WILHELM HÖHLKE.

Witnesses:

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