

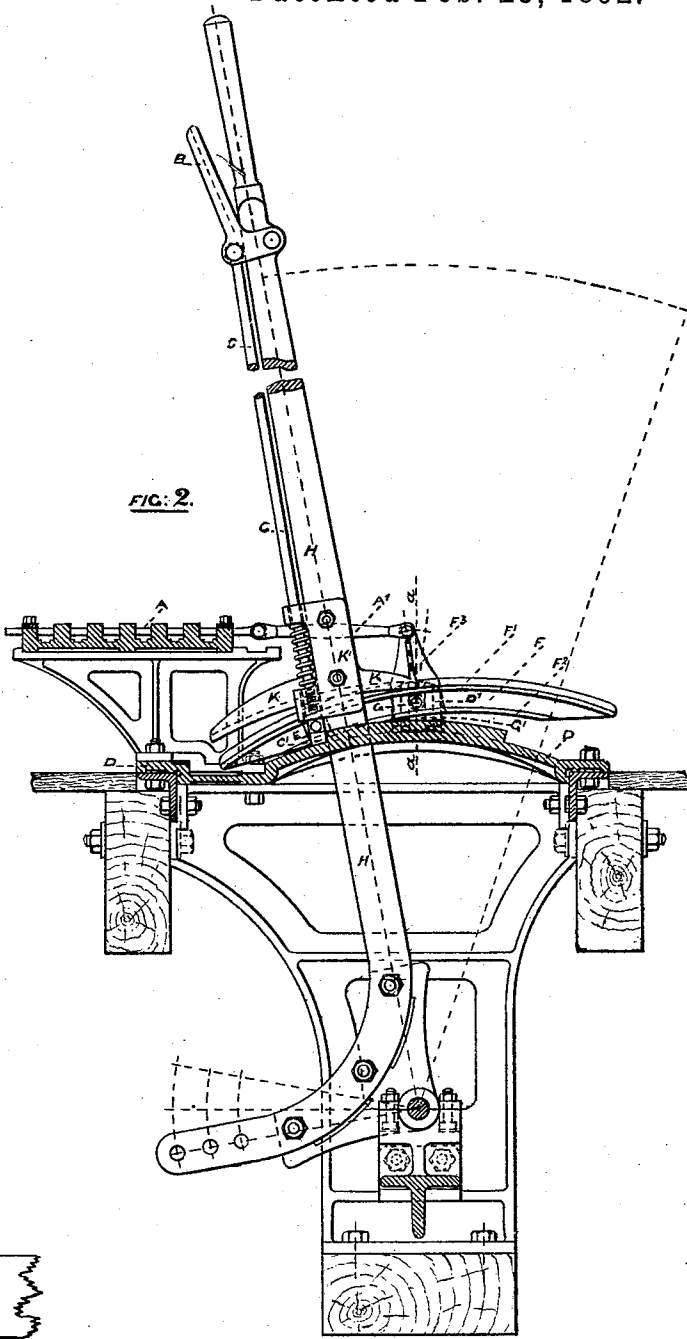
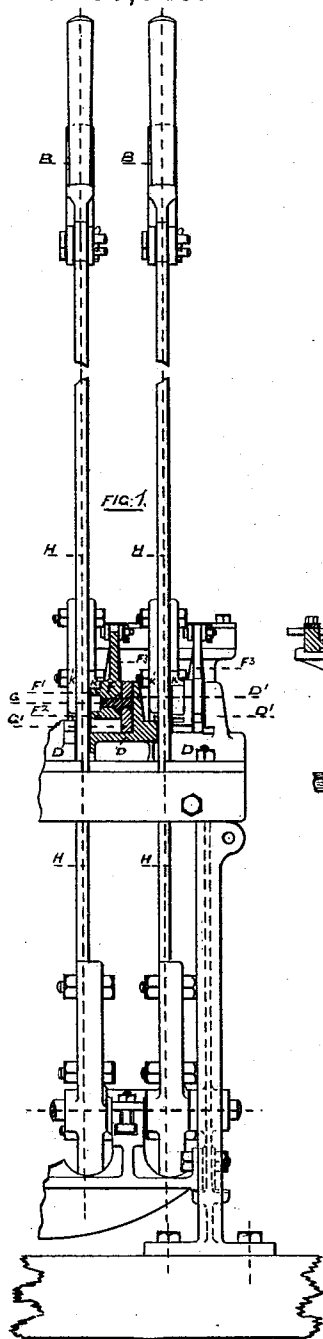
(No Model.)

H. BEZER & T. W. BURLEY.

MECHANISM FOR OPERATING RAILWAY SWITCH AND SIGNAL
INTERLOCKING GEAR.

No. 469,645.

Patented Feb. 23, 1892.



WITNESSES.

Geo F. Kichline
W. Stuckel

INVENTORS.

Henry Bezer
Thomas William Burley

UNITED STATES PATENT OFFICE.

HENRY BEZER AND THOMAS WILLIAM BURLEY, OF SOUTH EASTON,
PENNSYLVANIA.

MECHANISM FOR OPERATING RAILWAY SWITCH AND SIGNAL INTERLOCKING GEAR.

SPECIFICATION forming part of Letters Patent No. 469,645, dated February 23, 1892.

Application filed May 12, 1891. Serial No. 392,506. (No model.)

To all whom it may concern:

Be it known that we, HENRY BEZER, a subject of the Queen of Great Britain and Ireland, and THOMAS WILLIAM BURLEY, a citizen of the United States, both residing at South Easton, in the county of Northampton, State of Pennsylvania, have invented a new and useful Improvement in Mechanism for Actuating Interlocking Gear for Railway Switches and Signals, of which the following is a specification, reference being had to the accompanying drawings.

The object of our invention is to remedy certain defects in those interlocking apparatus in which is used the system of locking and interlocking well known as "preliminary actuation," and particularly those wherein that part known as the "rocker" is pivoted to the frame-work of the machine. Those defects, which our mechanism will remedy, are as follows: first, that frictional resistance which causes wear and breaking strain while passing the signal or switch lever past the pivot of the rocker; second, that increasing movement of the rocker possible as the signal or switch lever approaches the pivot of the rocker which, particularly under conditions of wear, may dangerously disturb the required safety of the locking, and which necessitates, therefore, for use with safety of that form of locking known as "miter-locking" and liked for its ease of access and repair, a movement of the tappets in excess of that required to bring the locks into proper relation with the tappets, thereby necessitating increased size and space for the lock-box and making the machine more cumbersome and costly; third, that breakage of the parts liable from rough usage of the apparatus by the operator or pull upon the catch-rod clutch while the signal or switch lever is being moved to either of its safety positions; fourth, that, as the catch-rod clutch must not be pulled upon when the lever is being moved to either of its safety positions, the catch of the catch-rod must rub upon the stationary projection from which it is lifted in order that the lever may be moved. This causes wear to both the parts, which leads to looseness in the locking. Figure 1 in the accompanying drawings is a front elevation with some parts in section

on line *a a* of Fig. 2; Fig. 2, a sectional side elevation of an interlocking machine. In the figures reference-letters show our actuating mechanism applied to a tappet and lock-box suitable for miter-locking.

We prefer to place the locking and its actuating mechanism above the floor-line of the machine, as shown; but it will be understood that the tappet A can be linked to any desired point of the rocker F and work either horizontally or vertically or rotatively, and also that the locking and its actuating mechanism can be placed below the floor-line of the machine.

Similar letters of reference in the figures designate corresponding parts.

By means of the usual clutch B its catch-rod C is lifted for disengaging its catch C' from the projection on the stationary segment D. On a stud riveted into the catch C' is the block E.

F is the arc-shaped lever, which we call the "rocker," pivoted at G to a sliding piece G', which is capable of sliding in V-shaped guides formed in uprights D', which may be either cast on or bolted to the segment D. There are ribs F' F² cast on the rocker F, forming a groove, within which fits the block E, (or it may be a roller.)

When the catch-rod is lifted, C' is clear of the projection on the stationary segment D, thereby unlocking the main lever H, and the block E will have raised the rocker F. Then the upper surface of the rib F' will be against the shield K, which is a part of the spring-box K', bolted to the main lever H. The arc of that surface of the shield K which is directly above the rib F' is concentric with the main lever H, and when the rocker F is raised, as just described, all the engaging faces of F' and F² are concentric with the lever H.

The adjustment of the catch-rod C is such that when the clutch B is brought against the lever H, C' is just clear of the projection on the stationary segment D and F', and therefore the rocker F is controlled by the shield K. Although not compulsory, it is preferable to grasp the clutch B and the lever H when moving the lever to either of its safety positions. This keeps C' just clear of the projection on D. It will be seen that throughout

the movement of the lever H there is next to no movement of the rocker F possible, because of the control of the shield K, and if in consequence of wear or not precise fitting of the parts it was possible to lift the rocker F to a position eccentric with the lever H, as the slide G' to which the rocker F is pivoted can rise with the rocker, there would always be a path for the block E without that kicking and breaking strain which would result were the rocker F pivoted to a fixed base, or it can be described that, as the rocker is pivoted to a movable base, it adjusts itself concentric with the main lever. Moreover, it will be observed that the pivot G of the rocker is located centrally with reference to the groove between the ribs of the rocker—that is to say, it is in the plane of the path of motion of the block or roller E in the groove between the ribs of the rocker. This avoids those frictional resistances which cause wear and breaking strain while the block or roller is passing the pivot of the rocker where that pivot is placed, for instance, below the path of motion of the block or roller.

It will be understood that when the catch-rod C lifts C' from one end of the projection on D and drops it into the other end the rocker F, through the arm F³ and link A', operates the tappet A in the usual well-known manner, and that the movement of the tappet A can be the minimum of what the miter-locking requires, because of the hereinbefore-described rigid conditions of the rocker F during the movement of the main lever H from one to the other of its safety positions.

We have not thought it necessary to illustrate in the drawings the miter-locking devices, as they are well known, and it will be understood that locking devices of any suitable kind could be actuated by our actuating mechanism.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The combination, with a main lever for operating a set of railway-switches or a sig-

nal and the catch for holding the said lever in either of its safety positions, fitted with a block E, of the shield K, the rocker F, pivoted at G to the sliding base G' and connecting with devices for interlocking that face of the rocker F and that of the shield K which engage with each other, and those faces of the rocker F which engage with the block E being of such a form that they can assume a position concentric with the said main lever whether the clutch B is grasped or not grasped during the movement of the said main lever from one to the other of its safety positions, and the rocker F so controlled that it has next to no rocking movement in any position of the said main lever other than one or the other of its safety positions, substantially as and for the purpose herein described.

2. The shield K, in combination with a main lever for actuating a set of railway-switches or a signal, the catch for holding the said lever in either of its safety positions, and a rocker connecting with devices for interlocking, substantially as and for the purpose herein described.

3. The combination, with a main lever for actuating a set of railway-switches or a signal and the catch for holding the said lever in either of its safety positions, of a rocker pivoted to a movable base, substantially as and for the purpose herein described.

4. The combination, with a main lever for actuating a set of railway-switches or a signal, said lever being fitted with a shield K, and the catch for holding the said lever in either of its safety positions, fitted with a block or roller, of a rocker grooved to engage with the block or roller and pivoted centrally with reference to such groove, substantially as and for the purposes set forth.

Signed by us this 24th day of April, 1891.

HENRY BEZER.

THOMAS WILLIAM BURLEY.

Witnesses:

GEO. F. KICHLINE,

LEWIS KLEBER.