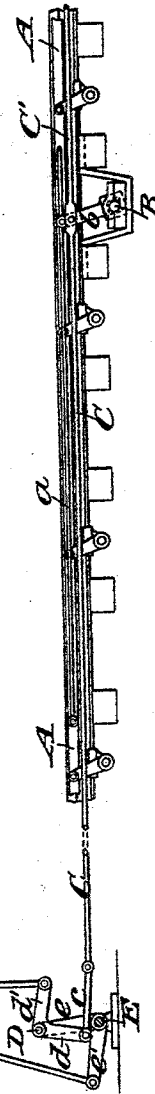
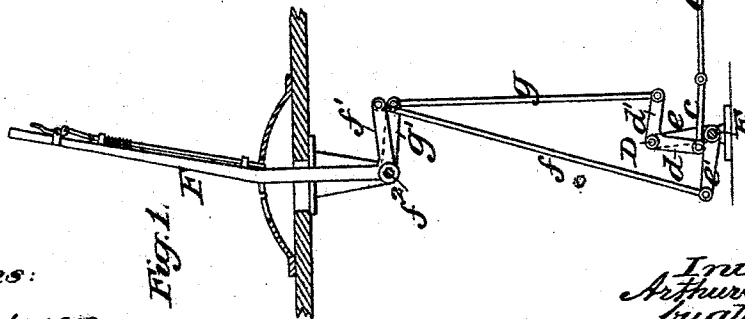
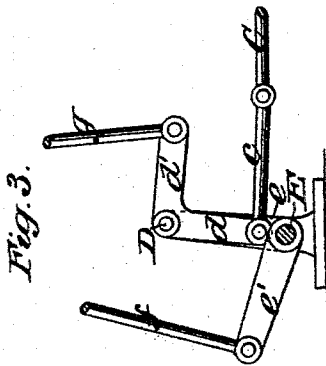
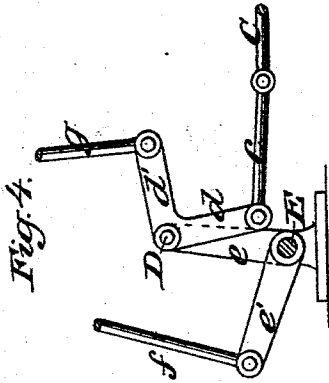
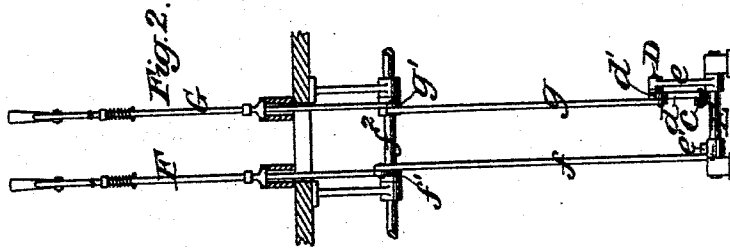


(No Model.)

A. H. JOHNSON.
DETECTOR BAR OPERATING MECHANISM.

No. 515,493.

Patented Feb. 27, 1894.



Witnesses:

C. Sundgren
Frederic Haynes

Inventor:
Arthur H. Johnson
by attorneys
Brown & Ward

UNITED STATES PATENT OFFICE.

ARTHUR H. JOHNSON, OF RAHWAY, NEW JERSEY.

DETECTOR-BAR-OPERATING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 515,493, dated February 27, 1894.

Application filed June 21, 1893. Serial No. 478,391. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR H. JOHNSON, a resident of Rahway, in the county of Union and State of New Jersey, have invented a new and useful Improvement in Detector-Bar-Operating Mechanism, of which the following is a specification.

My invention relates to an improvement in detector bar operating mechanism in which the load which is required to be moved in setting one of a gang of detector bars is divided between two levers so that they may each be moved through a comparatively short arc and each have a comparatively short arm connected with the load, thereby increasing the purchase and rendering it feasible for an operator to readily manipulate them.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Figure 1 is a view in side elevation of the operating levers, showing their connection with a rod for operating the gang of detector bars. Fig. 2 is a view of the levers and their connections, showing the same in rear elevation. Fig. 3 is a view in detail, showing the position of the bell crank levers intermediate of the operating levers and detector bar after the primary lever has been drawn back, and Fig. 4 is a view in detail, showing the position of the bell crank levers after the secondary operating lever has been drawn back.

One of the gang of detector bars, located—as is common—at a switch, is denoted by A; its connection with the arm *b* on a rock shaft B being denoted by *a*. The rock shaft B extends, as is common, across the track underneath the rails and has other of the gang of detector bars connected with its arms in a manner quite similar to that in which the bar A is connected therewith, so that the gang or set of detector bars will be simultaneously operated whenever the rock shaft B is rocked.

In the present illustration, I have shown a section of the track as would indicate the position of one set or gang of the detector bars, but it is to be understood that another set extended along the track might be in the same manner connected with each other by a rock shaft similar to the shaft B and might be con-

nected with the gang here shown by a connecting rod C' extending from the arm *b* along the track, as shown.

The operating rod for operating the set or gang or one or more sets or gangs of detector bars is denoted by C and is here shown as connected with the arm *b* above referred to. The end from which the rod C is operated is connected by a link *c* with one arm *d* of a bell crank lever, pivoted as at D to an arm *e* of another bell crank lever, the latter pivoted to a suitable fixed support, as at E. The opposite arm *e'* of the last referred to bell crank lever is connected by a link or rod *f* with the short arm *f'* of an operating lever F, pivoted to a suitable fixed support, as at *f*².

For convenience in distinguishing between the operating levers and the respective bell cranks to which they are connected, I shall refer to the operating lever F as the primary operating lever and to the bell crank with which it is connected as the primary bell crank lever; and to the operating lever G, corresponding to the operating lever F and mounted at its side to swing in axial alignment therewith, and connected to the arm *d'* of the first named bell crank lever by a link or rod *g*, as the secondary operating lever and to the bell crank lever, with which it is connected, as the secondary bell crank lever. This distinction is however purely arbitrary, as the operating lever G may be operated first and the lever F second, if so desired. The levers F and G are each provided with a hand and spring actuated dog, as is common, adapted to engage notches in racks at the sides of the levers to hold the levers in their swung adjustments, either forward or back, as is usual.

In operation, suppose it be required to throw the detector bars over toward the right, into position to lock the switch rails in a desired adjustment. The first half of the movement may be effected by drawing the lever F back, thereby rocking the arm *e* of the primary bell crank lever forward and carrying with it the secondary bell crank lever and the rod C connected therewith into the position shown in Fig. 3. The stroke may then be completed by drawing the operating lever G back, thereby throwing the arm *d* of the sec-

ondary bell crank lever forward and with it the rod C into the position shown in Fig. 4. This operation, by moving the rod C successively one-half of its full stroke, permits it to divide the labor between two levers and thereby enables me to make the shorter arms of said operating levers f' and g' one-half of the length that would be required if the entire stroke were to be effected by the movement of a single lever, the distance through which the handle of the operating lever is moved remaining constant.

What I claim is—

The detector bar operating mechanism

comprising bell crank levers, the one pivotally secured to a fixed support and the other pivotally secured to an arm of the former, a connection between an arm of the latter and the detector bar, and a pair of operating levers one of said levers being connected with one of said bell crank levers and the other of said operating levers connected with the other of said bell crank levers, substantially as set forth.

ARTHUR H. JOHNSON.

Witnesses:

FREDK. HAYNES,
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