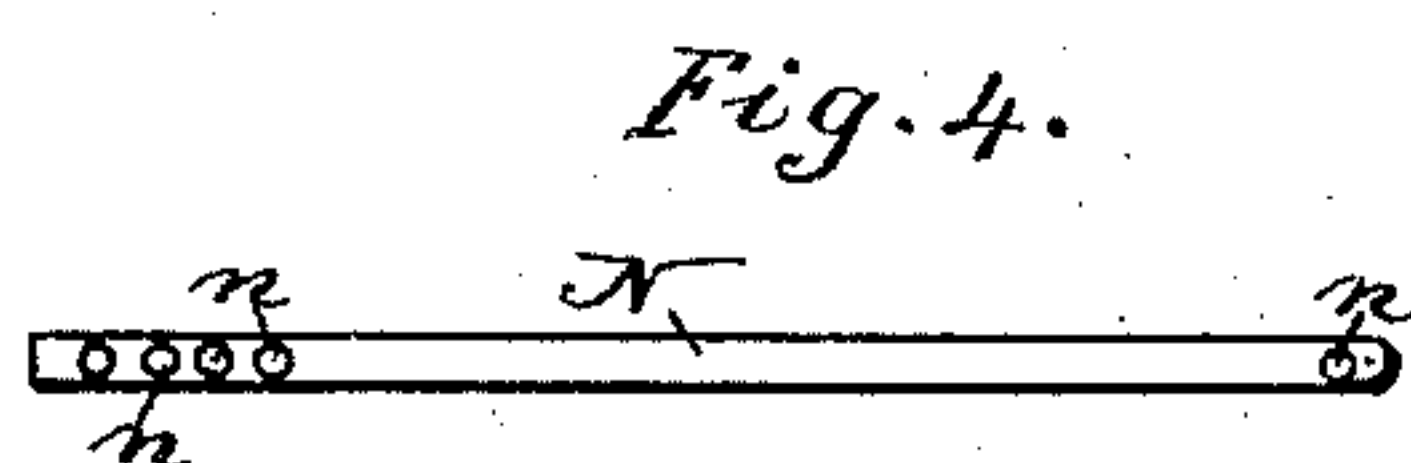
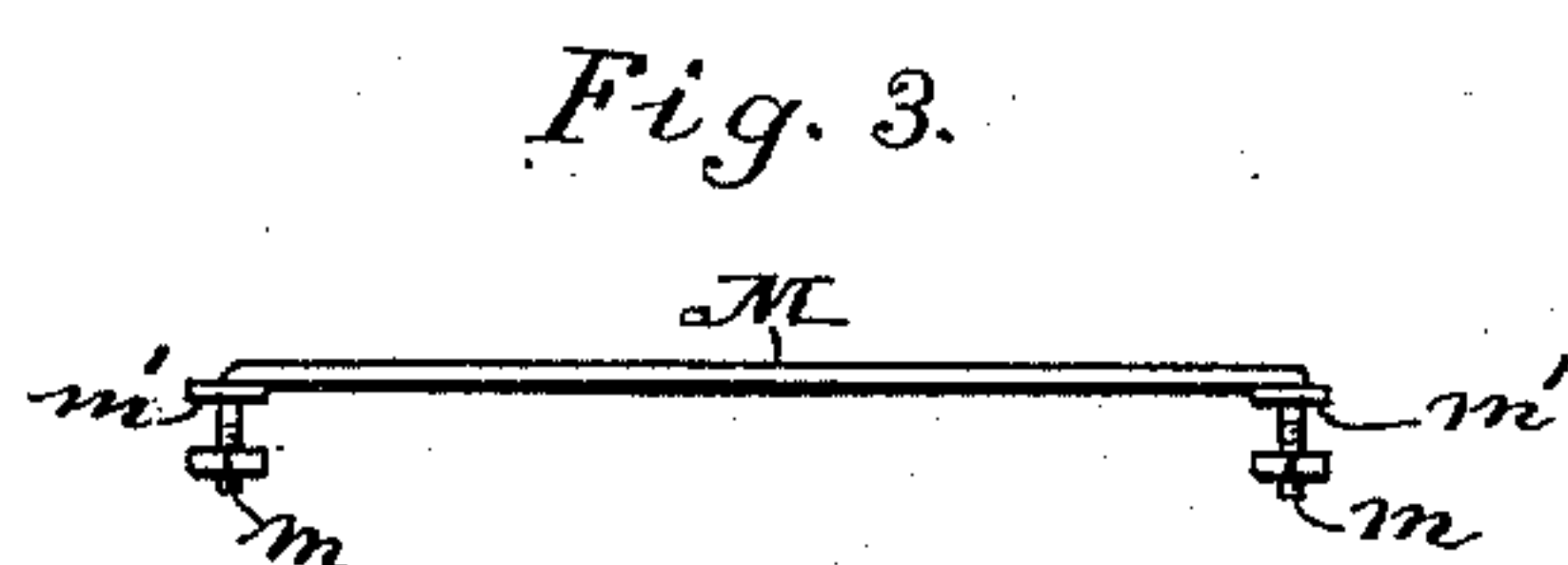
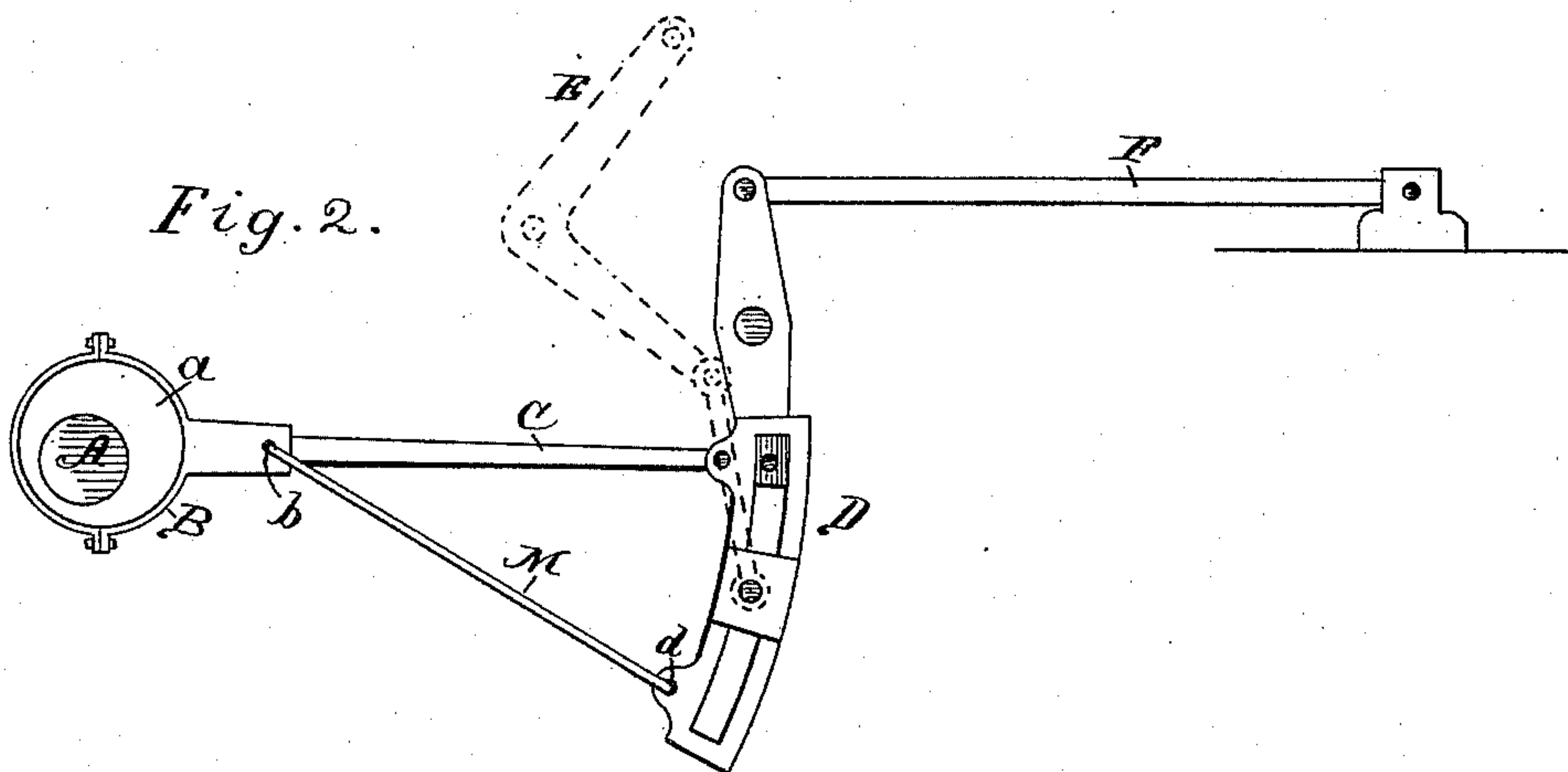
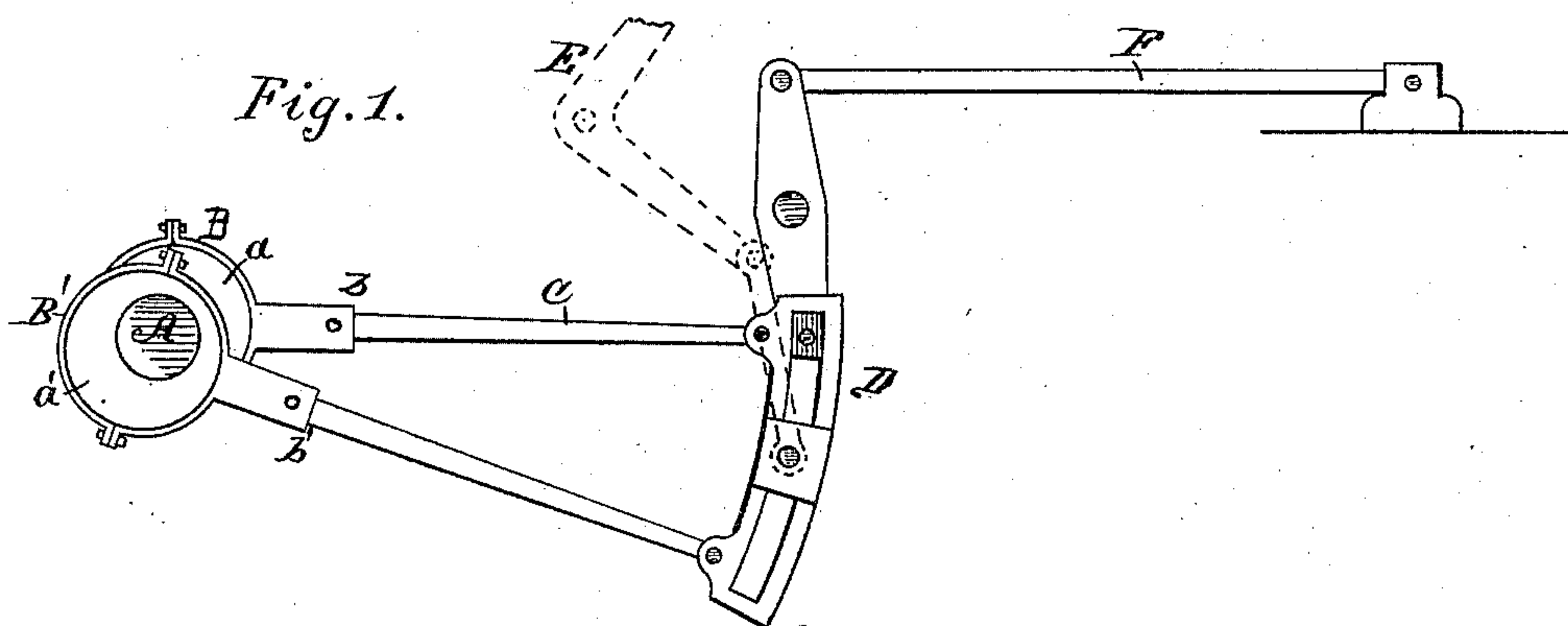


(No Model.)

J. W. SHINN.  
LOCOMOTIVE MACHINERY.

No. 432,090.

Patented July 15, 1890.



Witnesses  
Thos. Houghton,  
J. C. Schaefer

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W. H. H. H. H.

# UNITED STATES PATENT OFFICE.

JAMES W. SHINN, OF ALEXANDRIA, VIRGINIA, ASSIGNOR OF ONE-HALF TO  
ELI H. JANNEY, OF SAME PLACE.

## LOCOMOTIVE MACHINERY.

SPECIFICATION forming part of Letters Patent No. 432,090, dated July 15, 1890.

Application filed September 25, 1889. Serial No. 325,062. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES W. SHINN, a citizen of the United States, residing at Alexandria, in the county of Alexandria and State of Virginia, have invented certain new and useful Improvements in Locomotive Machinery; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 shows the mechanism to which the invention is to be applied. Fig. 2 shows the invention applied. Figs. 3 and 4 show different forms of rods or bars used in carrying out the invention.

In the operation of locomotives among the parts liable to break the connection of the link-motion is perhaps more likely to give way than any other. The result is often very annoying and frequently causes much delay. It sometimes happens that the train is too heavy to be run with one cylinder, and part of the train has to be side-tracked and left. Should the break occur on a curve, great difficulty is experienced in even starting a train.

It is the object of the present invention to provide an auxiliary device always at hand which can be substituted for a radius-bar should any part of the eccentric-connection be broken.

The invention consists in the device hereinafter pointed out.

In the annexed drawings, the letter A indicates the drive-shaft of a locomotive, on which are the usual eccentrics  $a a'$ . About these eccentrics are the eccentric-straps B B'. To these, at  $b b'$ , are secured the radii-arms C C',

which at their other ends are pivoted to the link D. E is the reversing-lever, and F the valve-connection.

In Figs. 3 and 4 are shown the devices which I propose to use should one of the eccentric connections break.

The rod M is provided with turned-out ends  $m m$ , there being preferably collars  $m' m'$  thereon. These ends  $m m$  are to be nuted. Instead of a rod, a flat bar N may be used with holes  $n$  at its ends, and separable bolts also may be used.

Upon the breakage of a connection it is removed and the rod put in its place. This is done by inserting one end  $m$  of the rod into the hole  $d$  of the link D, from which the broken connection has been removed, and the other end  $m$  into the hole  $b$  at the other eccentric. By using this device the link is braced against the remaining radius-rod, and is prevented from being thrown out of place as the engine runs. The length of the connecting device M must be such that the link will be kept its due distance from the drive-shaft A and its true curve preserved.

With such a device substituted for the broken connection the locomotive can be worked forward without any trouble.

Having described my invention, what I claim is—

The combination of the eccentric  $a$ , the radius-arm C, the link D, and the auxiliary device, the last connected to one end of the link D and to the eccentric, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES W. SHINN.

Witnesses:

R. N. CROOK,  
WM. FLEMING.