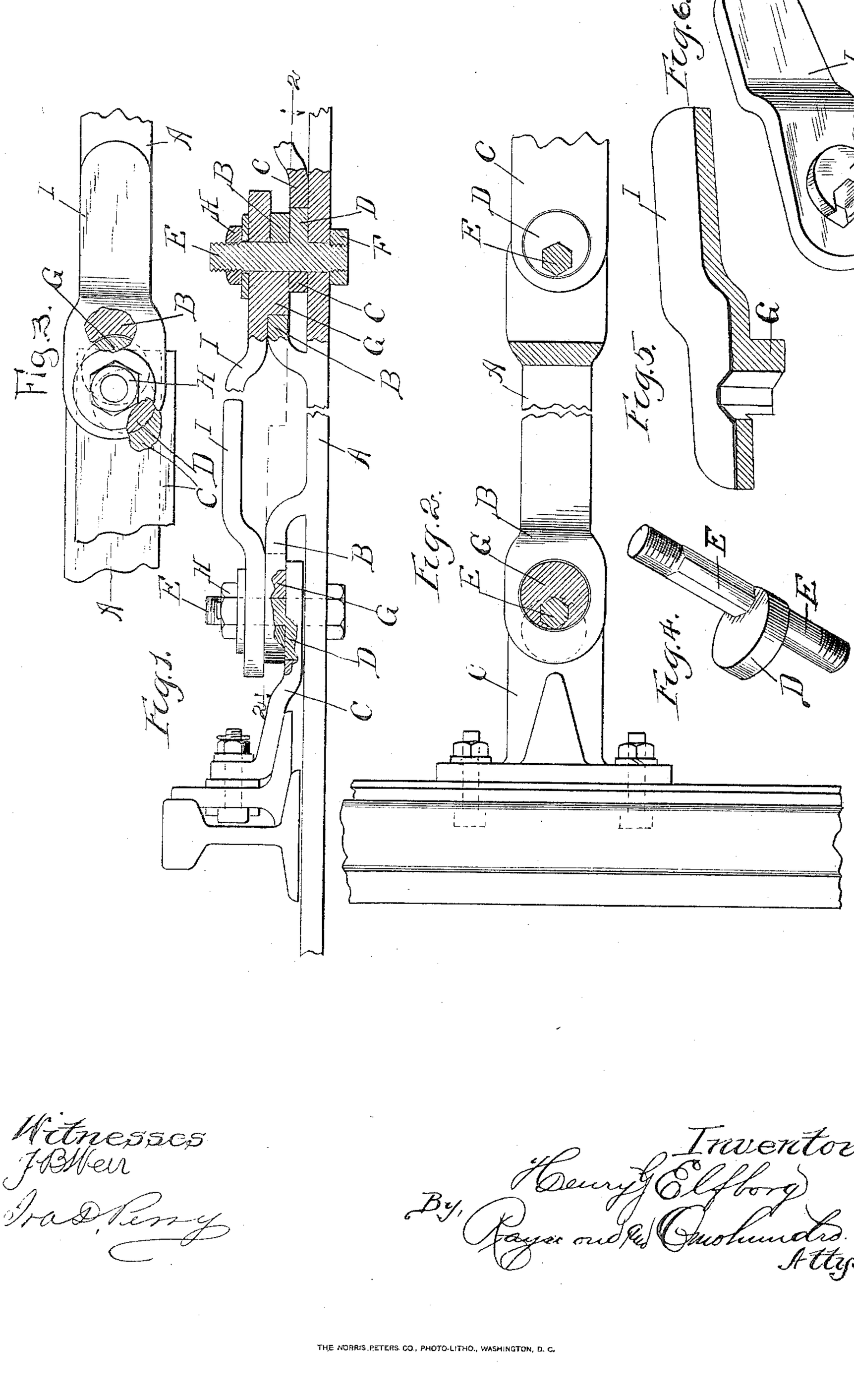
No. 640,456. Patented Jan. 2, 1900.

# H. G. ELFBORG.

## ADJUSTABLE SWITCH ROD.

(Application filed June 26, 1899.)

(No Model.)

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# UNITED STATES PATENT OFFICE.

HENRY G. ELFBORG, OF CHICAGO, ILLINOIS.

## ADJUSTABLE SWITCH-ROD.

SPECIFICATION forming part of Letters Patent No. 640,456, dated January 2, 1900.

Application filed June 26, 1899. Serial No. 721,866. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY G. ELFBORG, a subject of the King of Sweden and Norway, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Adjustable Switch-Rods, of which the following is a specification.

The present invention relates to that class of switch-rods that are designed for adjustably connecting the switch-rails, so that the proper positions of the latter with reference to the permanent rails may be always assured, while at the same time provision is made for taking up wear between the parts and compensating for variations in the positions of the movable parts of the switch.

More particularly stated, the invention relates to that class of switch-rods that are made in two or more parts joined through the medium of a block or plate to which one of the parts is eccentrically connected, the other of the parts being provided with an eye or socket or equivalent bearing in which the block or plate is fitted, so that it may be rotated for the purpose of adjusting the length of the rod.

One object of the present invention is to provide improved means for rotating the eccentric for the purpose of bringing the parts to proper adjustment; and another object of the invention is to provide improved means for locking the eccentric in place when once the adjustment is accomplished.

To these ends the invention consists in the features of novelty that are hereinafter fully described with reference to the accompanying drawings, which are made a part hereof, and in which—

Figure 1 is a sectional elevation of a switch-rod embodying the invention. Fig. 2 is a horizontal section thereof on the line 2 2, Fig. 1, looking downward. Fig. 3 is a plan view of a portion thereof. Fig. 4 is a perspective view of the eccentric and its shaft. Fig. 5 is a view, partly in perspective and partly in longitudinal section, of the locking block or plate and the lever for manipulating it. Fig. 6 is a perspective view of the under side thereof.

A represents the switch-rod, which is connected to each of the switch-rails by the means hereinafter described with reference to one of them. The rod is provided with an overhanging ear B, extending parallel with it and providing jaws between which projects a portion of the chair C. The portion aforesaid of the chair is provided with a circular eye or socket, in which fits, so as to be capable of rotation, an eccentric D, formed with or non-rotatively attached to a shaft E. The portion of the rod A which forms one of the jaws has an opening through which the shaft E passes and in which it has pivotal bearing, permitting its rotary movement, the lower end of the shaft being threaded for the reception of a nut F. The ear B, forming the other jaw, is also provided with an opening through which the shaft projects, the portion of the shaft occupying this opening being of non-circular shape, preferably polygonal. The opening in the ear B is for the purpose of providing a seat or bearing for a locking block or plate G, which has means for non-rotatively engaging the shaft, the upper portion of the shaft being threaded for the reception of a nut H for holding the locking-block in place.

With the parts constructed as described and assembled the non-rotative engagement of the shaft and locking-block will prevent the shaft from rotating independently of the block, and the eccentricity of the block with respect to the pivotal axis of the shaft will prevent it from rotating within its seat or bearing in the ear B, and thus the eccentric is locked in place. When, however, the locking-block is removed, the shaft E is without restraint and may be turned for the purpose of throwing the eccentric to the position that will accomplish the desired adjustment. Having brought it to this position, the locking-block may be again replaced in its seat or bearing in the ear B provided the shaft be placed in such position that the features of its non-circular portion will register with the complementary features of the locking-block. As shown in the drawings, the shaft is of hexagonal shape, and consequently this will permit of the placing of the eccentric in any one of five different positions. Where closer adjustments are desired, the number of features on the non-circular portion of the shaft may be increased.

In order to facilitate the turning of the shaft

in the process of adjusting the cam, the locking-block is provided with an extension I in the nature of a handle or lever, so that if the locking-block be lifted far enough to remove its circular portion from the seat in the ear B it will still be in engagement with the non-circular portion of the shaft and may be used as a wrench for turning it.

It will be observed that for the purpose of preventing the rotation of the shaft it is simply necessary that the locking-block have non-rotative engagement with the shaft and be itself prevented from moving about the axis of the shaft; but for the purpose of enabling the assembling of the parts when the eccentric and shaft are integral or permanently united it is necessary to have in one of the two jaws between which it is disposed an opening large enough to admit it. It is for this reason that the seat for the locking-block preferably takes the form of a circular eye sufficiently large to admit the eccentric, and the circular form of this seat makes it necessary to dispose it eccentrically with respect to the shaft.

I have shown and described the invention as being embodied in a switch-rod; but manifestly it is applicable to any two parts forming a connection which it is necessary or desirable to adjust in length, and I therefore desire to have it understood that in its broadest aspect the invention is not limited to embodiment in a switch-rod strictly so called.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination with two parts to be joined, of an eccentric pivoted to one of them and fitting rotatively in an eye or socket in the other, a locking-block seated upon the part to which the eccentric is pivoted, means for non-rotatively connecting the eccentric and locking-block, and means for preventing the locking-block from moving about the pivotal axis of the eccentric, substantially as set forth.

2. The combination with two parts to be joined, of an eccentric pivoted to one of them and fitting rotatively in an eye or socket in the other, a circular locking-block, means connecting the eccentric to the locking-block eccentrically, and a seat for the locking-block carried by the part to which the eccentric is pivoted, substantially as set forth.

3. The combination with two parts to be joined, of an eccentric fitting rotatively in an eye or socket in one of the parts, a shaft carrying the eccentric and having pivotal bearing in the other of the parts, a locking-block having non-rotative engagement with the shaft, and means carried by the part in which the shaft has its pivotal bearing for preventing the locking-block from moving about the axis of the shaft, substantially as set forth.

4. The combination with two parts to be joined, of an eccentric fitting rotatively in an eye or socket in one of them, a shaft carrying the eccentric and having pivotal bearing in the other of the parts, said shaft having a non-circular portion, a locking-block having non-rotative engagement with the non-circular portion of the shaft, and means carried by the part in which the shaft has its pivotal bearing for preventing the locking-block from moving about the axis of the shaft, substantially as set forth.

5. The combination with two parts to be joined, one of which has a pair of jaws and the other of which has a portion fitting between the jaws and provided with an eye or socket, of an eccentric occupying the eye or socket, a shaft by which the eccentric is carried, and a circular locking-block having non-rotative engagement with the shaft, one of the jaws being provided with an opening in which the shaft has pivotal bearing and the other of the jaws being provided with a circular opening disposed eccentrically with respect to the shaft and of sufficient size to admit the eccentric, in which opening the locking-block fits, substantially as set forth.

6. The combination with two parts to be joined, of an eccentric fitting rotatively in an eye or socket formed in one of them, a shaft carrying the eccentric and having pivotal bearing in the other of said parts, a locking-block having non-rotative engagement with the shaft, means carried by the part in which the shaft has its pivotal bearing for preventing the locking-block from moving about the axis of the shaft, and a handle carried by the locking-block for manipulating it, substantially as set forth.

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