

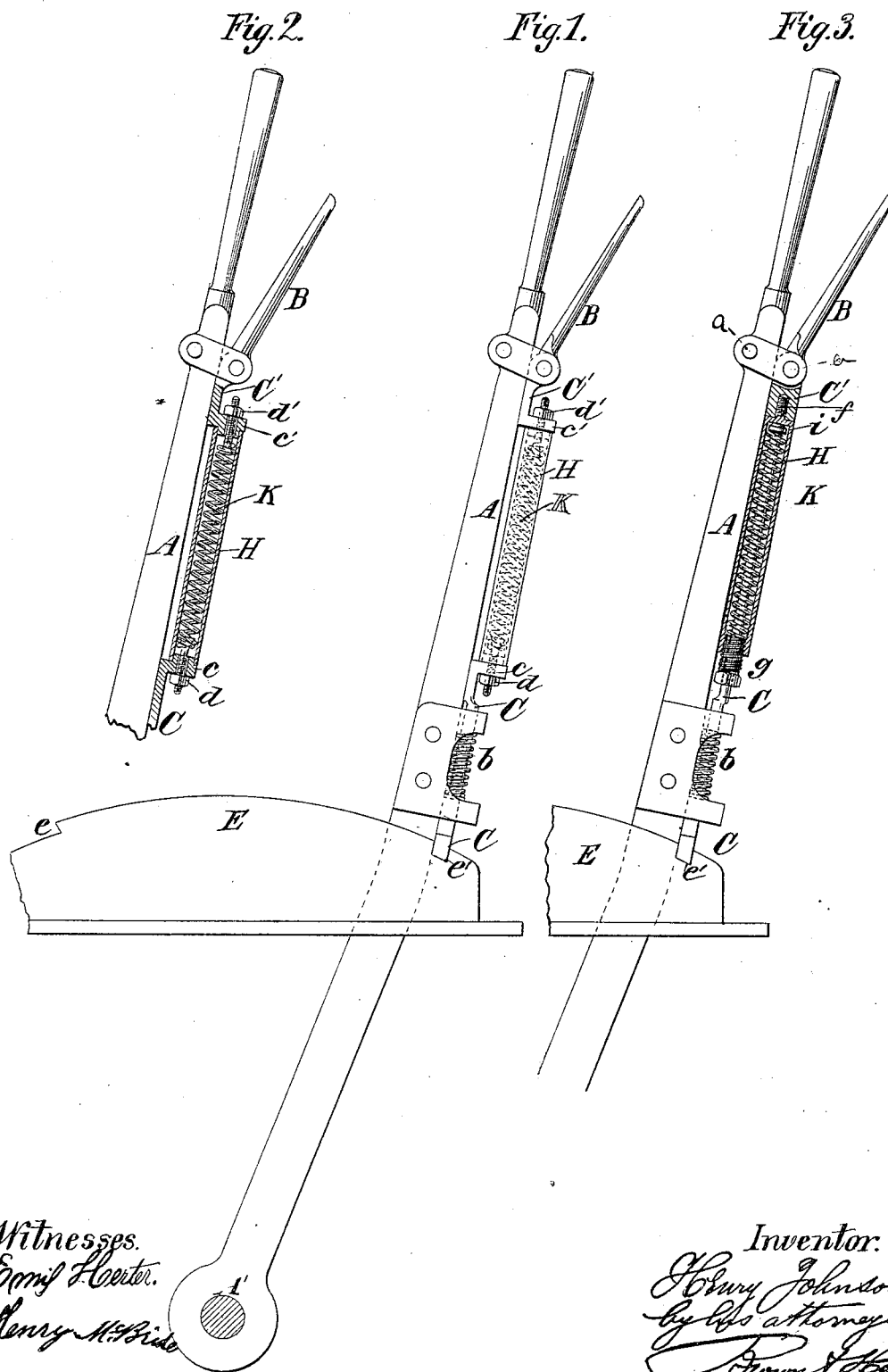
(No Model.)

H. JOHNSON.

APPARATUS FOR ACTUATING INTERLOCKING GEAR FOR RAILWAY  
POINT AND SIGNAL LEVERS.

No. 344,482.

Patented June 29, 1886.



# UNITED STATES PATENT OFFICE.

HENRY JOHNSON, OF THE WILLOWS, FLIXTON, COUNTY OF LANCASTER,  
ENGLAND.

APPARATUS FOR ACTUATING INTERLOCKING GEAR FOR RAILWAY POINT AND SIGNAL LEVERS.

SPECIFICATION forming part of Letters Patent No. 344,482, dated June 29, 1886.

Application filed February 24, 1886. Serial No. 193,081. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY JOHNSON, a subject of the Crown of Great Britain, residing at The Willows, Flixton, in the county of Lancaster, England, have invented a new and useful Improvement in Apparatus for Actuating Interlocking Gear for Railway Points and Signals, of which the following is a specification, reference being had to the accompanying drawings.

This invention is applicable to the system of locking and interlocking, well known as "preliminary actuation," by which the unlocking and locking is effected before any movement of the main lever for operating the points or signals takes place.

The object of this improvement is to prevent the undue strain on the locking apparatus and consequent liability to injury of said apparatus which results from any attempt to operate the catch on any main lever at a time when the apparatus is locked at some other place; and to this end the improvement consists, principally, in the combination, with a lever for working a set of railway points or a signal, a catch attached to the said lever for holding it in either of its safety positions, and a handle or lever operating the said catch, of a spring which forms a connection between said catch and said handle or lever, and which possesses sufficient resistance to be not affected by the proper force required to effect the unlocking and locking, but which is capable of yielding to any additional force exerted upon it through the handle or lever last mentioned.

The invention consists also in certain details hereinafter described and claimed.

Figure 1 is a side elevation of a main lever and its catch and catch-operating devices, and a part of the lever-stand, illustrating my invention. Fig. 2 exhibits portions of the main lever and the catch-rod and its connections corresponding with Fig. 1, but showing the said connections in section. Fig. 3 is a side view, partly in section, illustrating a slight modification of the catch-rod connections.

Similar letters of reference indicate corresponding parts in the several figures.

A is the main lever for operating the point or signal working upon a fulcrum, A', in the usual manner, and having attached to it the

sliding catch-rod C C', which is capable of engaging in either of the safety-notches *e e'* in the segment E of the lever-stand, and which has applied to it the spring *b*, for pressing it into and retaining it in either of the notches *e e'*, all as is common in interlocking point and signal operating apparatus, except that the catch-rod, instead of being of one piece, consists of the two pieces C C', of which the lower piece, C, is the catch proper, engaging with the segment E of the stand, and having applied to it the spring *b*, and the upper piece, C', which is connected with the handle or catch-rod lever B, which is fulcrumed at *a* to the main lever A. These two pieces C C' are connected together by the spiral spring K, which constitutes the principal feature of my invention.

In the example of the invention shown in Figs. 1 and 2 the spring K is a tension-spring, and is connected by screw-bolts and nuts *d d'* to lugs *cc'*, provided on the two parts C C' of the catch-rod, and it is inclosed within and protected by a tubular casing, H, which receives within its ends projections on the lugs *cc'*.

The only difference between the example shown in Fig. 3 and that shown in Figs. 1 and 2 is, that in the example shown in Fig. 3 the spring K, instead of being a tension-spring, is a compression-spring, and is consequently connected with the pieces C C' in a somewhat different manner.

In Fig. 3 the tubular spring-case H is closed at its upper end, and furnished with a screw, *f*, by which it is connected with the upper piece, C', and the said case is furnished at its lower end with a screw-gland, *g*, which confines the spring K. The lower part, C, of the catch-rod works freely through this gland and passes entirely through the spring, and is furnished at its upper end above the spring with a head or collar, *i*.

In either example of my invention the force applied to the catch-lever B to operate the catch C is transmitted through the spring K, which is made of such strength and so adjusted by the nuts *d d'* or gland *g* that it is capable of exerting a much greater resistance than the ordinary catch-rod spring *b*, and that it will resist and transmit any force that may

be applied to it by the lever B, sufficient to raise the catch C and operate the locking mechanism when the latter is not otherwise locked, but that it will yield to force greater than will perform such operation, and hence will not transmit force sufficient to break or injure any part of the locking mechanism if the catch-lever B be pulled when the said mechanism is otherwise locked.

10 In the example shown in Figs. 1 and 2 the spring K is lengthened, and in that shown in Fig. 3 the spring K is shortened, when power is applied sufficient to overcome its resistance. In other respects their operation is the same.

15 My invention is applicable in connection with various kinds of interlocking gear, and the catch C may be connected with the said gear in any well known or suitable manner—as, for instance, in the manner shown in United States Patent to John Saxby, No. 230,200, dated July 10, 1880, or in that shown in the United States Patent of Henry A. Johnson, No. 317,137, dated May 5, 1885; but as the improvement simply relates to the connection

25 between the catch and catch-lever, and involves no changes in other parts of the apparatus, I have not thought it necessary to show the connections between the catch-rod and the locking apparatus.

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

1. The combination, with a main lever for operating a set of railway-points or a signal, and a catch for holding said lever in position, and a handle or catch-lever for operating the said catch attached to said main lever, of a spring applied between said catch and said handle or catch-lever and serving to transmit to the said catch the force applied to said handle or catch-lever, substantially as and for the purpose herein set forth.

2. The combination, with the main lever, the catch for holding the same in position, and a catch-spring, as *b*, for pressing the said catch to an operative position, of a handle or catch-lever attached to the main lever, and a spring stronger than the said catch-spring, forming the connection through which power or force applied to the said handle or catch-lever is transmitted to the catch, substantially as and for the purpose herein described.

HENRY JOHNSON.

Witnesses:

WM. HUHNE,

J. W. STAFFORD,

*Clerks with Messrs. Ormerod & Allen, Solicitors, Manchester.*