

(No Model.)

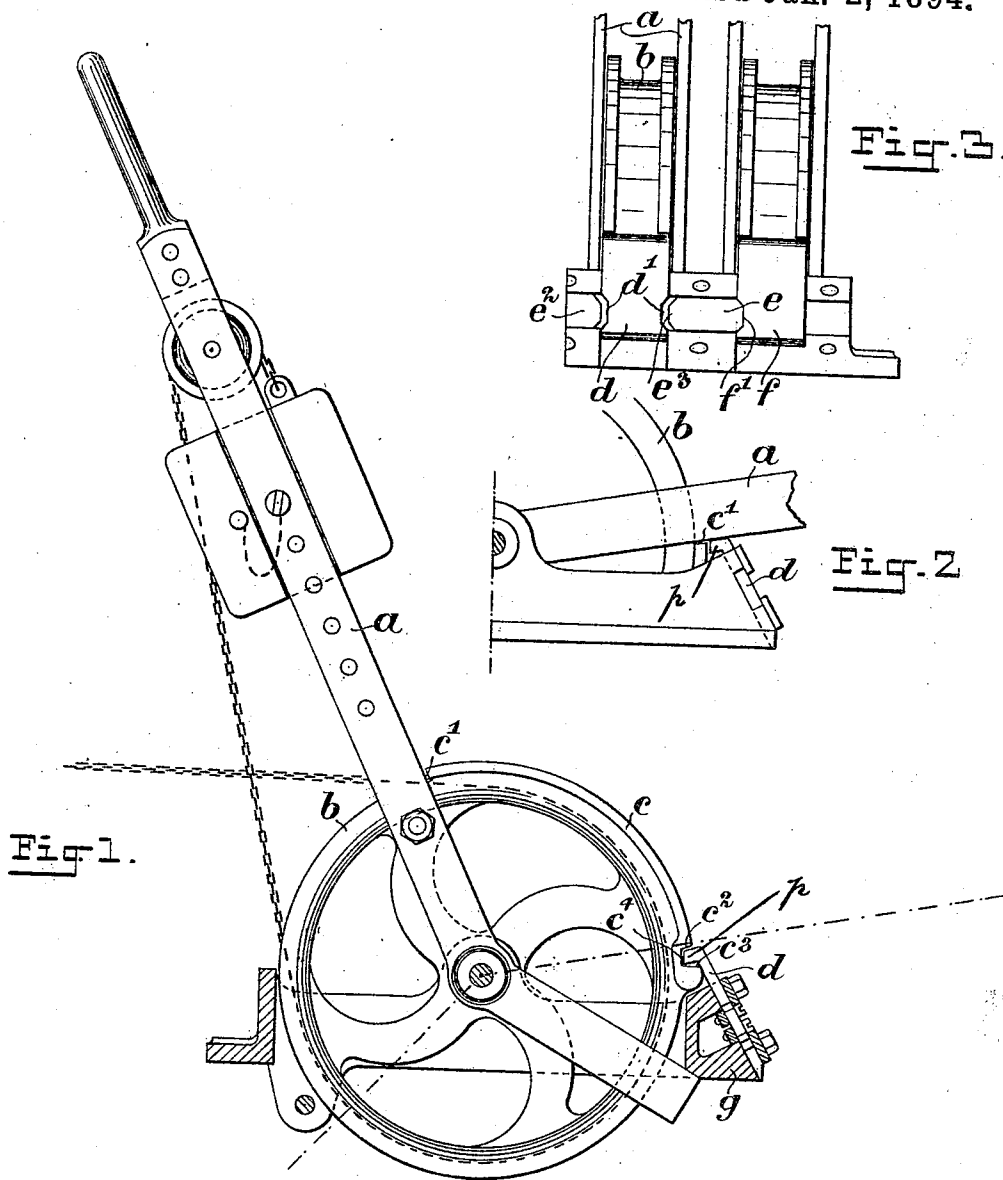
2 Sheets—Sheet 1.

S. T. DUTTON.

INTERLOCKING LEVER FOR RAILWAY SIGNALING.

No. 511,884.

Patented Jan. 2, 1894.



Witnesses

William F. Pascoe
S. M. M. M.

Inventor

S. T. Dutton

per

Sam. P. O'Donnell
Attorney.

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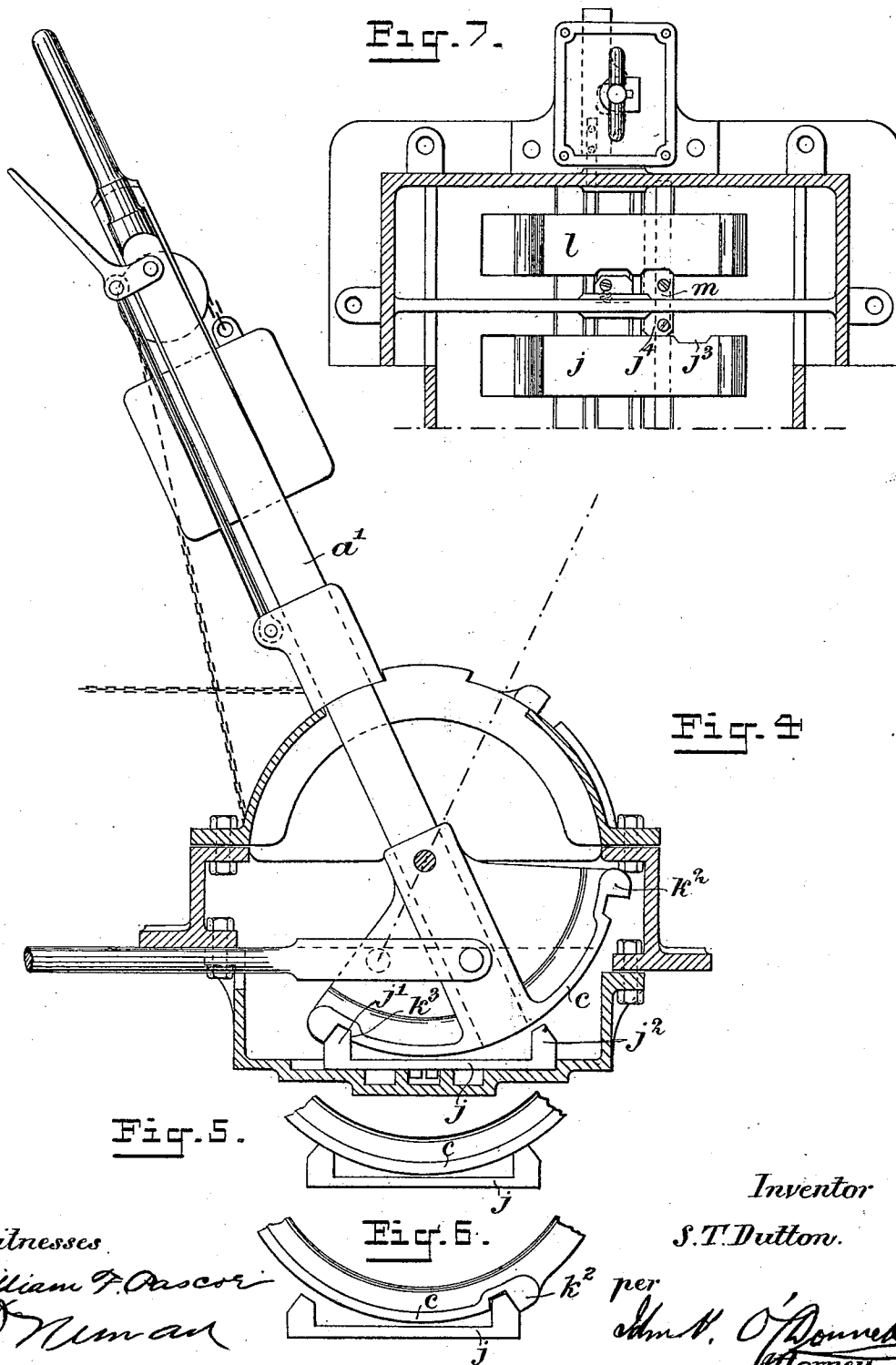
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UNITED STATES PATENT OFFICE.

SAMUEL TELFORD DUTTON, OF WORCESTER, ENGLAND.

INTERLOCKING LEVER FOR RAILWAY SIGNALING.

SPECIFICATION forming part of Letters Patent No. 511,884, dated January 2, 1894.

Application filed July 1, 1893. Serial No. 479,413. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL TELFORD DUTTON, a subject of the Queen of Great Britain and Ireland, residing at Marl Bank, in the city and county of Worcester, England, have invented new and useful Improvements in Interlocking Pull-Over Levers for Railway Signaling, of which the following is a specification.

My invention has reference to improvements in interlocking pull-over levers, and consists in a handy and convenient method of making one lever lock another. It is understood of course that the interlocking may be either by one lever directly locking a conflicting one or by one lever releasing another one.

The way in which I carry out my invention is illustrated as follows:

Figure 1 is a side view partly in section of a pull-over lever arranged for locking only. In this figure the lever is in the normal position. Fig. 2 illustrates the lever pulled over and the locking effected. Fig. 3 is a front view showing the interlocking tappets and locks and the sheave of the pull-over lever. Fig. 4 illustrates the pull-over levers in the normal position. The lever seen in this figure is for working points with a reduced stroke and is arranged for releasing as well as interlocking. Fig. 5 shows the interlocking tappet during the travel of the lever. Fig. 6 shows the interlocking tappet when the movement is completed and the final movement given to the said tappet. Fig. 7 is a plan on the under side of the sheave of the pull-over lever, showing the arrangement of the interlocking tappets and locks. This figure also illustrates the application of what is known as an "Annett's key," such as shown and described in the specification of the English patent to James E. Annett, No. 3,427, dated October 2, 1875.

An ordinary signal lever *a*, (pivoted in a frame adjacent to other similar levers,) is provided with a sheave *b*, and the said sheave has at one part of its periphery a curved rib or sector *c*. A tappet *d* having notches *d'* in its sides is arranged in the same plane as the rib *c* and is free to slide in the guide *g*. The next adjacent lever is provided with a similar tappet *f*, shown in Fig. 3, having a notch *f'*.

A lock *e* slides horizontally in the guide *g* between the two said tappets, and has beveled corners so that the movement of one tappet can move the lock to the right or left to cause it to engage with the notch in the other tappet, and prevent the last said tappet from being moved by the lever to which it pertains.

The rib *c* has two lugs *c²* and *c³* at one end of it. These lugs engage with a projection *p* on the end of the tappet *d*.

In the modification shown in Fig. 4, the rib *c* is provided with two lugs at each end, and the tappet has two projections, one for each pair of lugs on the rib *c*. This form of lever is better adapted for use in working points.

The working of my invention is as follows:—

On moving over the lever, Fig. 1, the lug *c²* of the rib *c* moves down the tappet *d* and the necessary locking of conflicting levers is effected. This will be seen on reference to Fig. 3, as assuming that the tappet *d*, Fig. 3, is moved, the notch *d'* is moved beyond the lock *e²* and also beyond the lock *e³*, so that the tappet *f* connected to the next lever is locked in its normal position through the notch *f'* in the tappet *f*. The lever, which is a signal lever, on being pulled right over assumes the position in Fig. 2. Upon the lever being replaced to its normal position, the lug *c³* on the return movement of the sheave or pulley *b* moves back the tappet *d* into the normal position, as illustrated in Fig. 1. In Fig. 4, which illustrates both locking and releasing, in the single movement over of the lever *a'*, the projection *k³* moves the tappet *j* to the left and effects the locking and on the completion of the stroke of the lever, which is a point lever, the projection *k²* completes the movement of the tappet and effects the releasing of the adjacent lever which was locked by the tappet *j* when first moved by the lever *a'*. While the lever *a'* is in its travel, after the tappet is first moved, there is no movement on the tappet, as will be seen in Fig. 5, but on the completion of the movement of the lever the tappet is given a final movement and the sheave and tappet assume the position as shown in Fig. 6.

The releasing and interlocking of the tappets *j* attached to the various levers is illustrated in Fig. 7, in which the tappet *j* has to be moved until the notch *j³* is in front of the

lock j^4 ; the tappet l attached to the next lever is then free to be moved and consequently the lever with which it works is free.

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, with a pivoted lever provided with a curved rib c having two lugs at one end of it, of a sliding tappet provided with a projection at one end and a notch in one side, a guide supporting the said tappet, and a horizontally-arranged lock engaging with the said notch and sliding in the said guide when the said lever is moved to operate the tappet, whereby the next adjacent similar lever is locked, substantially as set forth.

2. The combination, with a pivoted lever provided with a curved rib c having two lugs

at each end of it, of a sliding tappet provided with a projection at each end and a notch in one side, a guide supporting the said tappet, and a horizontally-arranged lock engaging with the said notch and sliding in the said guide when the said lever is turned to operate the tappet, substantially as and for the purpose set forth.

In testimony whereof I have hereunto affixed my signature in the presence of two witnesses.

SAMUEL TELFORD DUTTON.

Witnesses:

G. W. HULL,

Railway Signal Works, Worcester, Accountant.

A. E. CROFT.

Railway Signal Works, Worcester, Clerk to Messrs. Dutton & Co., L'd.