

(No Model.)

2 Sheets—Sheet 1.

E. L. GILES.

THREE WAY SWITCH.

No. 333,745.

Patented Jan. 5, 1886.

Fig. 1.

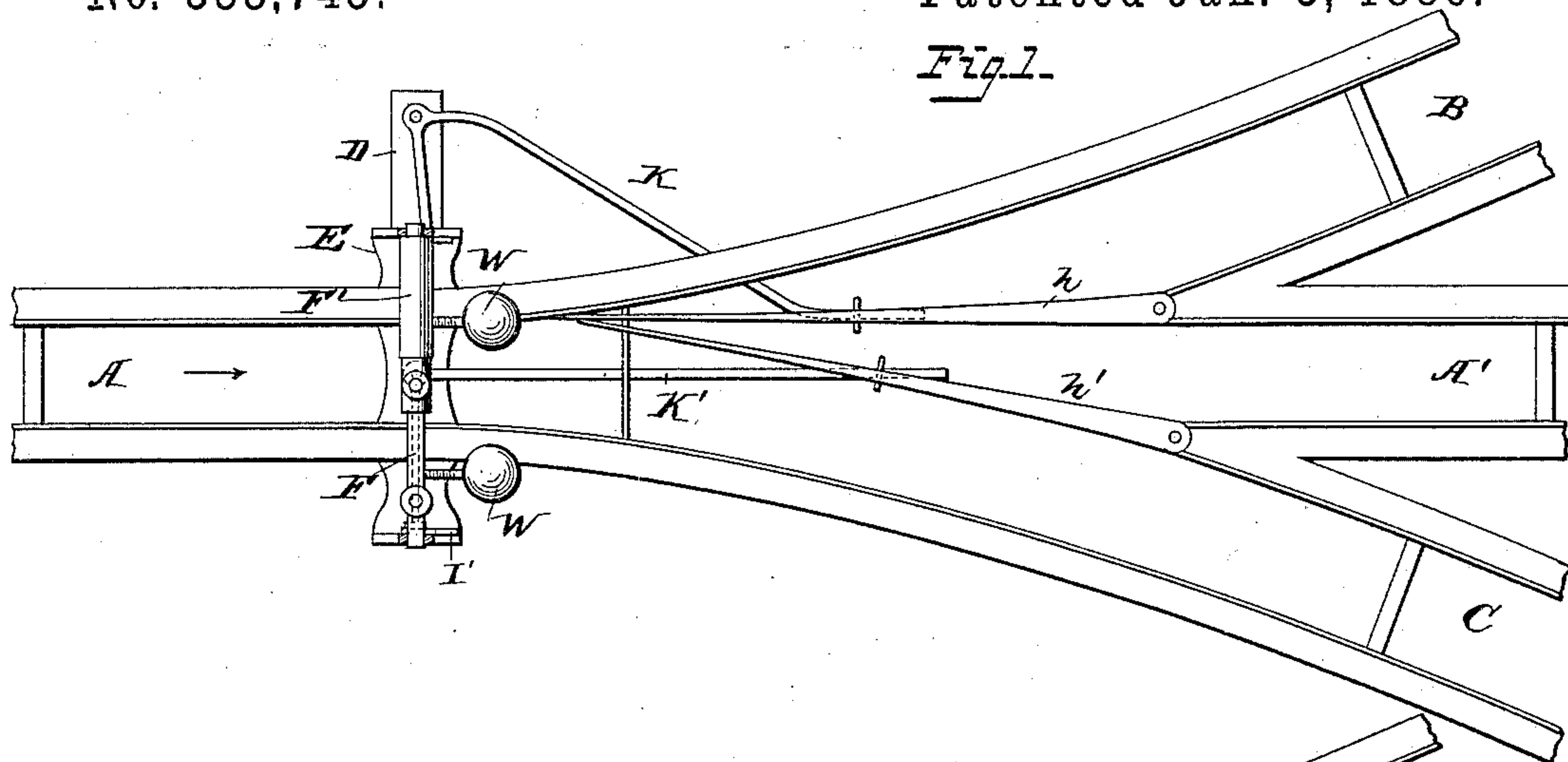


Fig. 2.

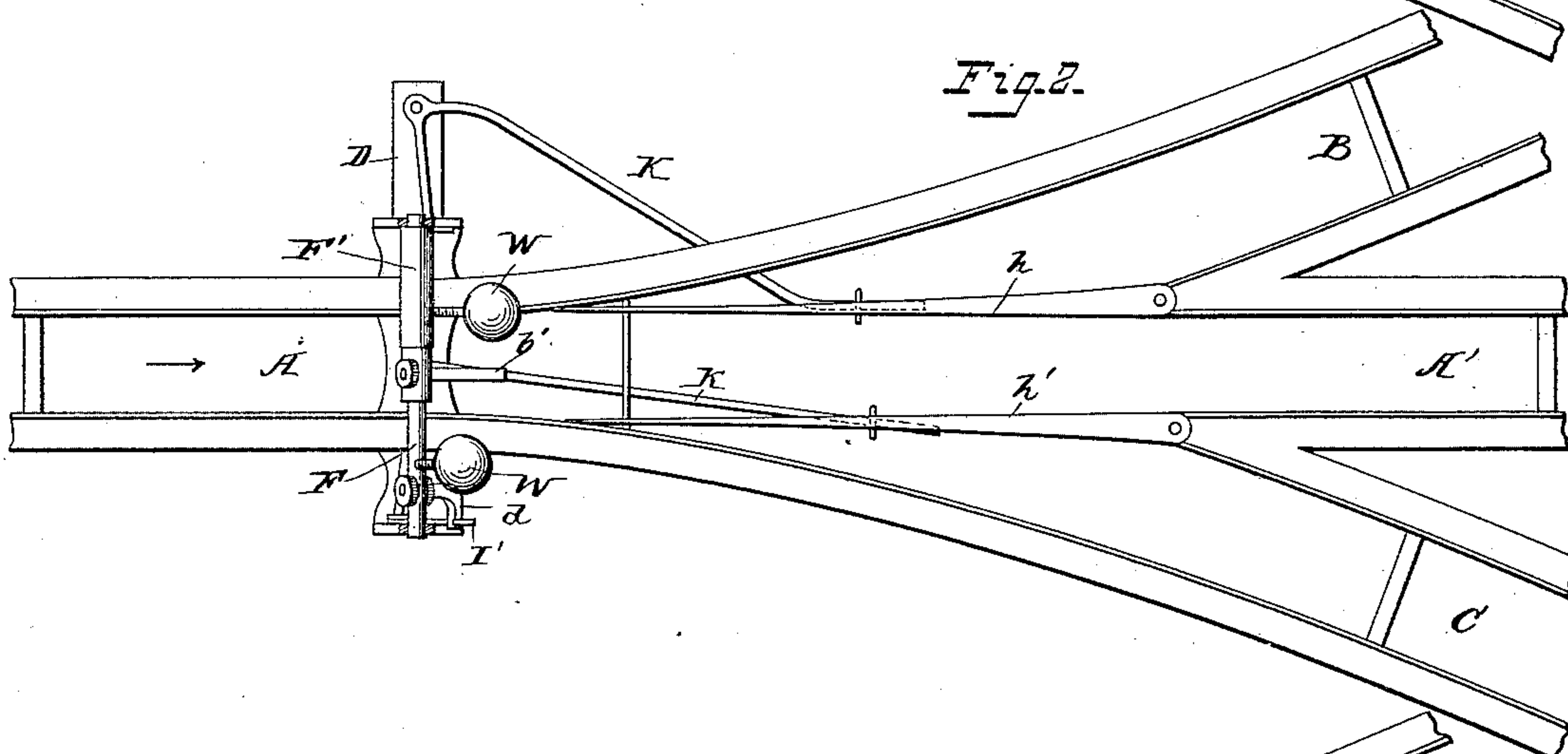
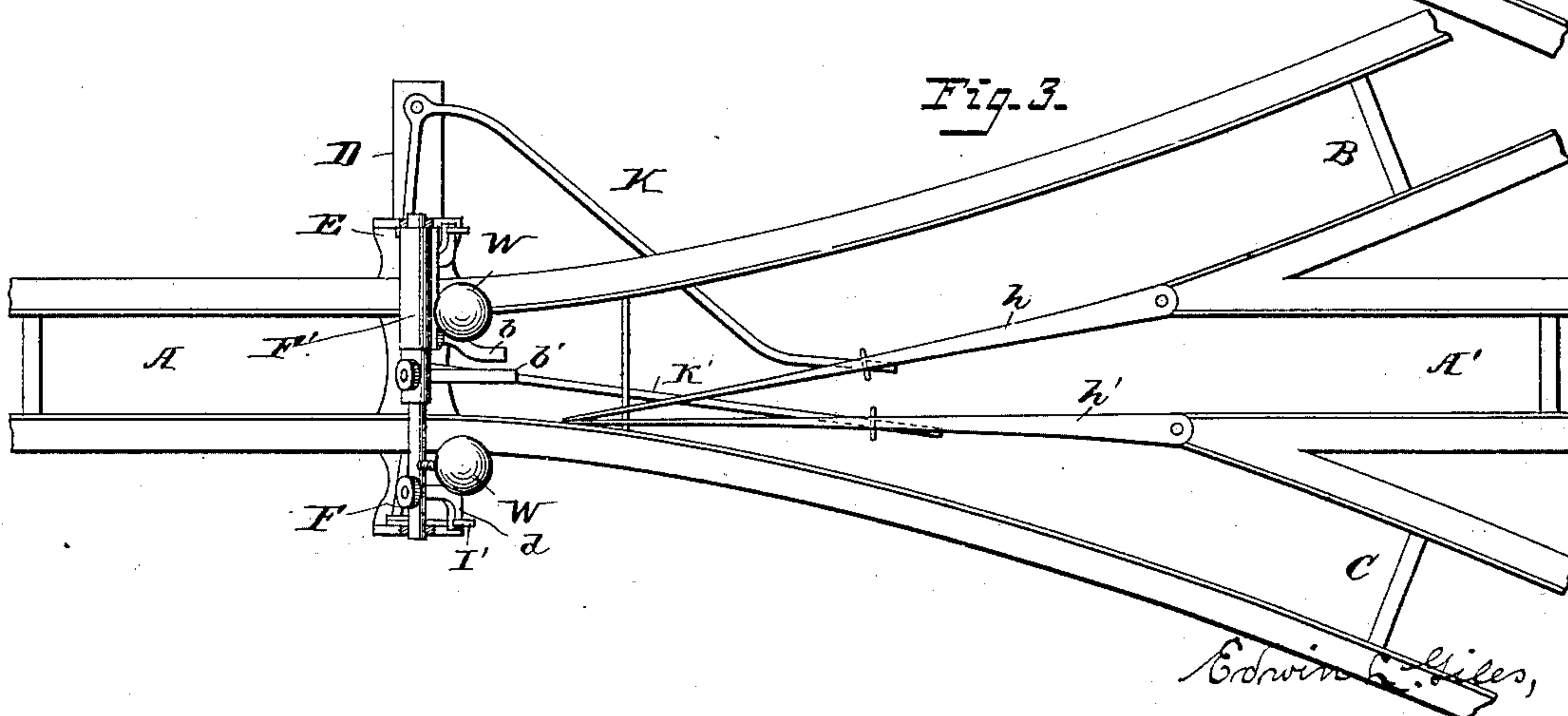


Fig. 3.



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H. C. Hansmann.

~~Edwin L. Miles,~~

Inventor:

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By J. Foster & Freeman
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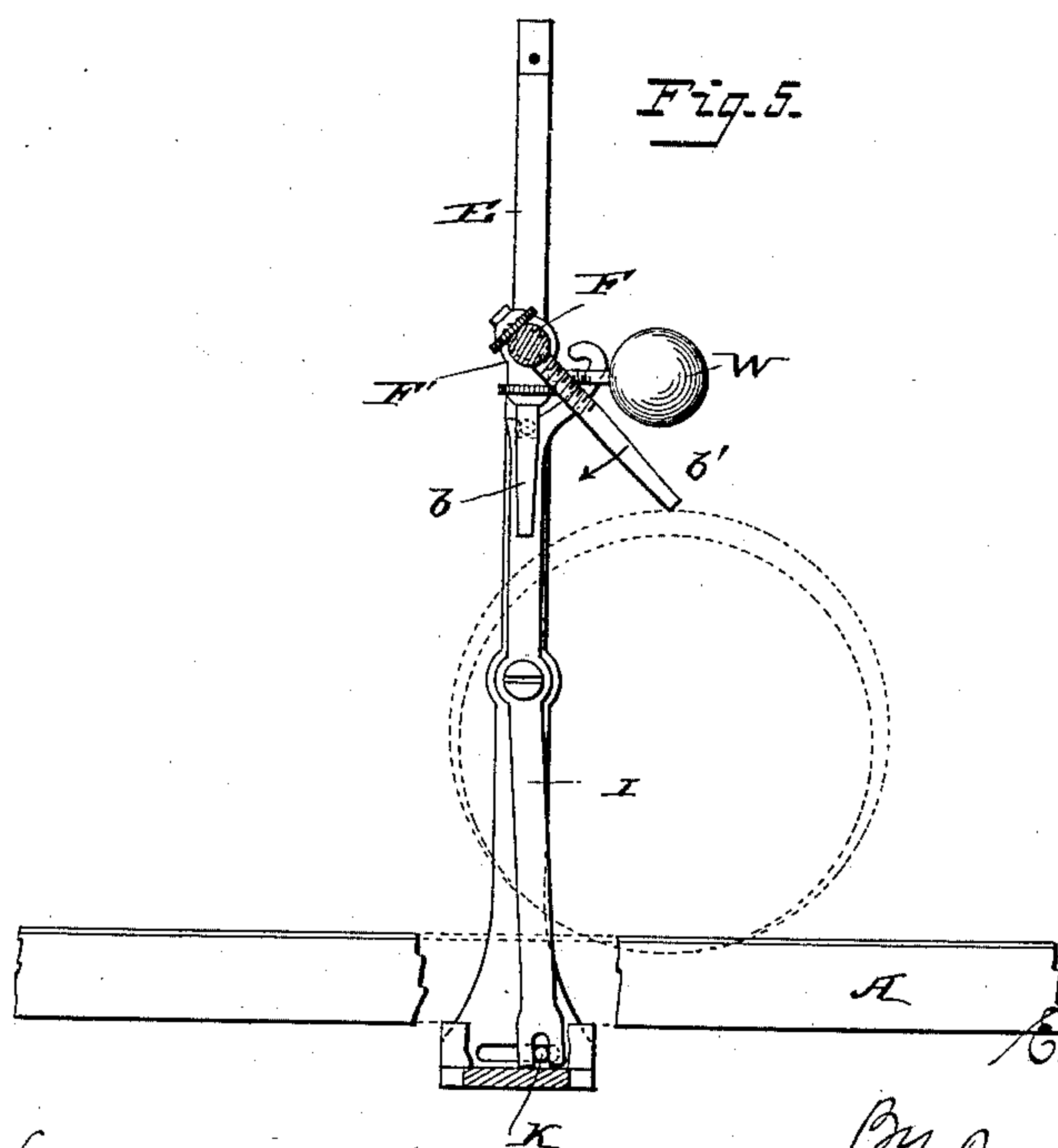
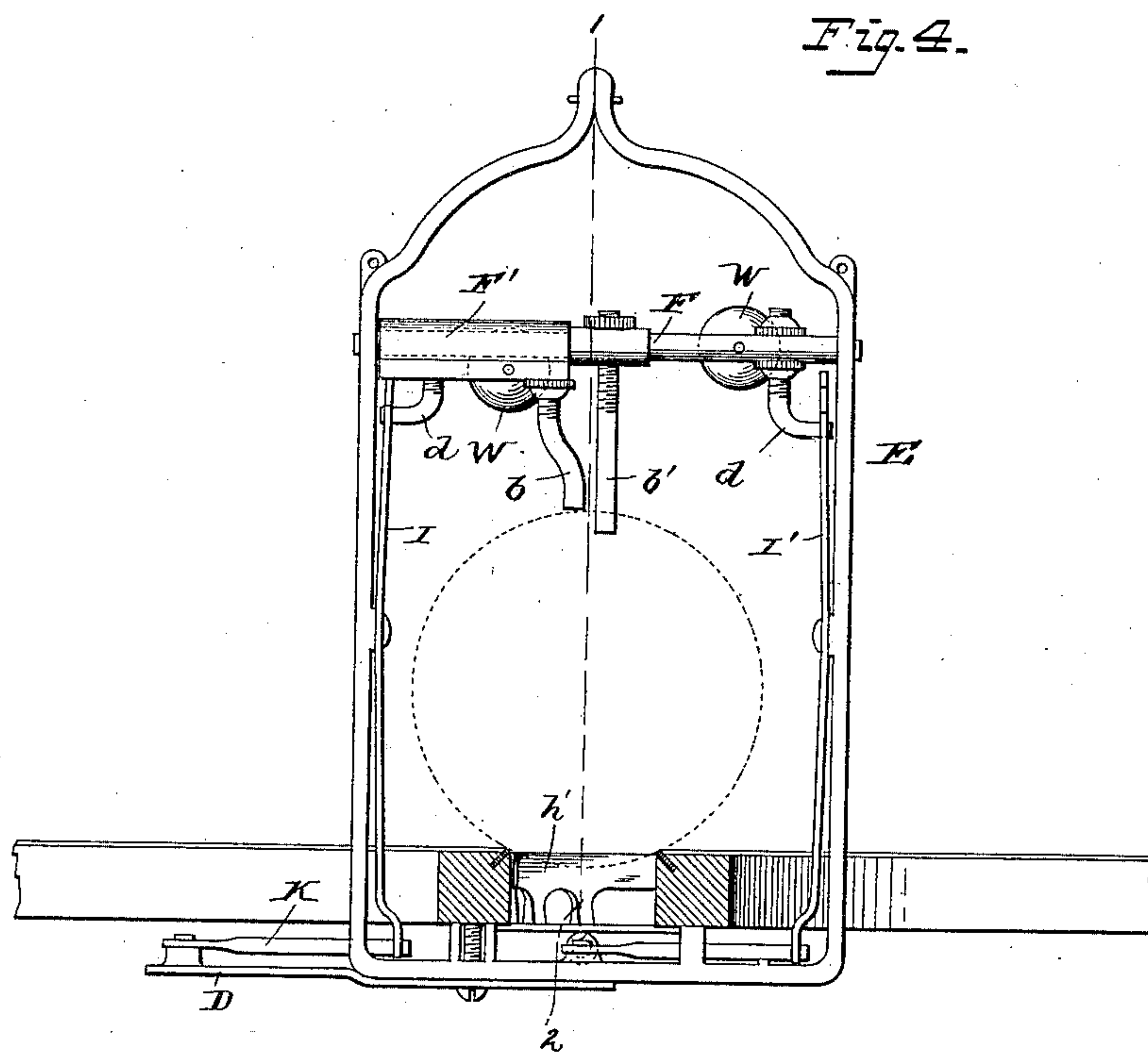
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H. C. Hansmann.

Edwin L. Giles,
Inventor:
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UNITED STATES PATENT OFFICE.

EDWIN L. GILES, OF LOWELL, MASSACHUSETTS.

THREE-WAY SWITCH.

SPECIFICATION forming part of Letters Patent No. 333,745, dated January 5, 1886.

Application filed June 6, 1885. Serial No. 167,868. (No model.)

To all whom it may concern:

Be it known that I, EDWIN L. GILES, a citizen of the United States, and a resident of Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Three-Way Switches, of which the following is a specification.

My invention relates to that class of switches for store-service apparatus in which two tongues are employed for directing the carriers to different branches; and my invention consists in the combination, with the tongues, of independent adjusting devices, as fully set forth hereinafter, and as illustrated in the drawings, in which—

Figure 1 is a plan view showing part of the main and branch tracks of a store-service way and my improved switching devices. Figs. 2 and 3 are plan views showing the parts in different positions. Fig. 4 is a transverse sectional elevation, looking in the direction of the arrow, Fig. 1, and drawn to an enlarged scale. Fig. 5 is a sectional elevation on the line 1 2, Fig. 4.

A A' is the main track; B C, the branch tracks; and *h h'* are switch-tongues pivoted at the intersection of the two tracks, and serving, according to their positions, to constitute continuations of the main-track or siding rails, so as to direct carriers passing from the portion A of the track in the direction of the arrow to either of the side tracks or to the portion A' of the main track, the different positions to which the tongues may be set being illustrated in Figs. 1, 2, and 3. In a separate application for Letters Patent I have described means for adjusting the said tongues *h h'* automatically by the movements of graduated carriers passing toward the switch device from the track A, the said application showing a device consisting of a shaft provided with an arm arranged to be struck by the carriers so connected to the tongues that one or both of the latter will be moved according to the extent of the movement of the said arm. My present invention consists in the use of separate actuating devices arranged to be operated by carriers of different sizes. The tongues are maintained normally by weights or springs in any one of the three positions in which they are set. In the construction of the devices shown the

tongues are held normally in position to keep the connection open between the main track and the branch C, each tongue being operated upon by a bell-crank lever, the lever K extending through an eye of the tongue *h*, and the lever K' extending through an eye of the tongue *h'*, and each lever being pivoted to a cross-bar, D, connected to or forming part of a yoke, E, inclosing the track. The bell-crank lever is connected with a device for operating it, and these devices are of such a character as to be operated by balls of different sizes and independently of each other.

The operating device shown is an arm, which may be arranged above, below, or at the side of the track in such position as to be struck and moved by carriers of a certain size, which motion is transferred through the lever K or K', or its equivalent, to one of the tongues, there being of course two arms, one in connection with each tongue.

As shown, the arms *b b'* extend downward, the arm *b'* being supported adjustably by a rock-shaft, F, turning in bearings in the yoke E, and the arm *b* being secured to a sleeve, F', turning upon the shaft F. From the shaft F extends an adjustable bent arm, *d*, the end of which is arranged to engage with shoulders upon a lever, I', pivoted to the side of the yoke E, and slotted at the lower end to receive the end of one arm of the lever K', and from the sleeve F' extends a bent arm, *d*, the end of which engages with a lever, I, slotted at the lower end to receive the end of one arm of the lever K. From the shaft F, and also from the sleeve F', projects an arm carrying a weight, W, which weights tend to turn the shaft and sleeve in the direction of the arrow, Fig. 5, and thereby, through the medium of the connecting devices, carry both tongues *h h'* to the position shown in Fig. 1. The arm *b'* is set to a lower position than the arm *b*, or is so arranged as to be struck by the carriers of such a size as can pass below the arm *b*, but is not so long as to make contact with smaller carriers used in the apparatus.

When the smallest carriers pass in the direction of the arrow, Fig. 1, they will avoid contact with both the arms *b b'*, and will be directed to the branch C. Carriers of a larger size will strike the end of the arm *b'* and will

vibrate the shaft F, and through the connections will cause the tongue *h'* to be carried to the position shown in Fig. 2, when the carrier will move along the main track. Carriers of the larger size will strike first the arm *b'* and will move the tongue *h'* to the position shown in Fig. 2, and will then make contact with the arm *b* and move the tongue *h* to the position shown in Fig. 3, so that the carrier will be conducted to the branch B.

It is of course important that the tongues *h* *h'* shall extend sufficiently near to the arm or other device operated by the carriers to permit the latter to pass onto the tongue after the same is adjusted and before the carrier passes from the operating device, so that the tongue will be retained in its position by the weight of the carrier until the latter passes onto the stationary portion of the track.

It will be seen that the weights W, connected to the operating devices of the tongues, serve to retain the latter normally in the position shown in Fig. 1; but it will be evident that these weights may be applied in different ways to effect the same purpose, and that the springs would be the equivalents of weights in the same connection. It will also be evident that the hollow sleeve or shaft F' may be supported independently of the shaft F.

Without limiting myself to the precise construction and arrangement of parts shown, I claim—

1. The combination, with the main and

branch tracks of a store-service apparatus, of switch-tongues and independent devices, substantially as described, arranged to be operated by carriers of different sizes, and connections between each of the devices and one of the tongues, substantially as set forth. 35

2. The combination, with the tracks and switch-tongues, of independent arms arranged adjacent to the track to be struck by carriers of different sizes, weights connected to maintain the tongues normally in one of the positions in which they can be set, and connections between the arms and the tongues, substantially as described. 40 45

3. The combination of the track, independent switch-tongues, independent shafts carrying arms of different lengths, and connections, substantially as described, between each shaft and one of the tongues. 50

4. The combination of the main and branch tracks, independent switch-tongues, shaft F, provided with an arm arranged to be struck by the carriers and connected with one of the tongues, and hollow shaft F', also provided with an arm turning on the shaft F and connected to the other tongue, substantially as set forth. 55

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses. 60

EDWIN L. GILES.

Witnesses:

E. F. ENDICOTT,
C. W. LOCKE.