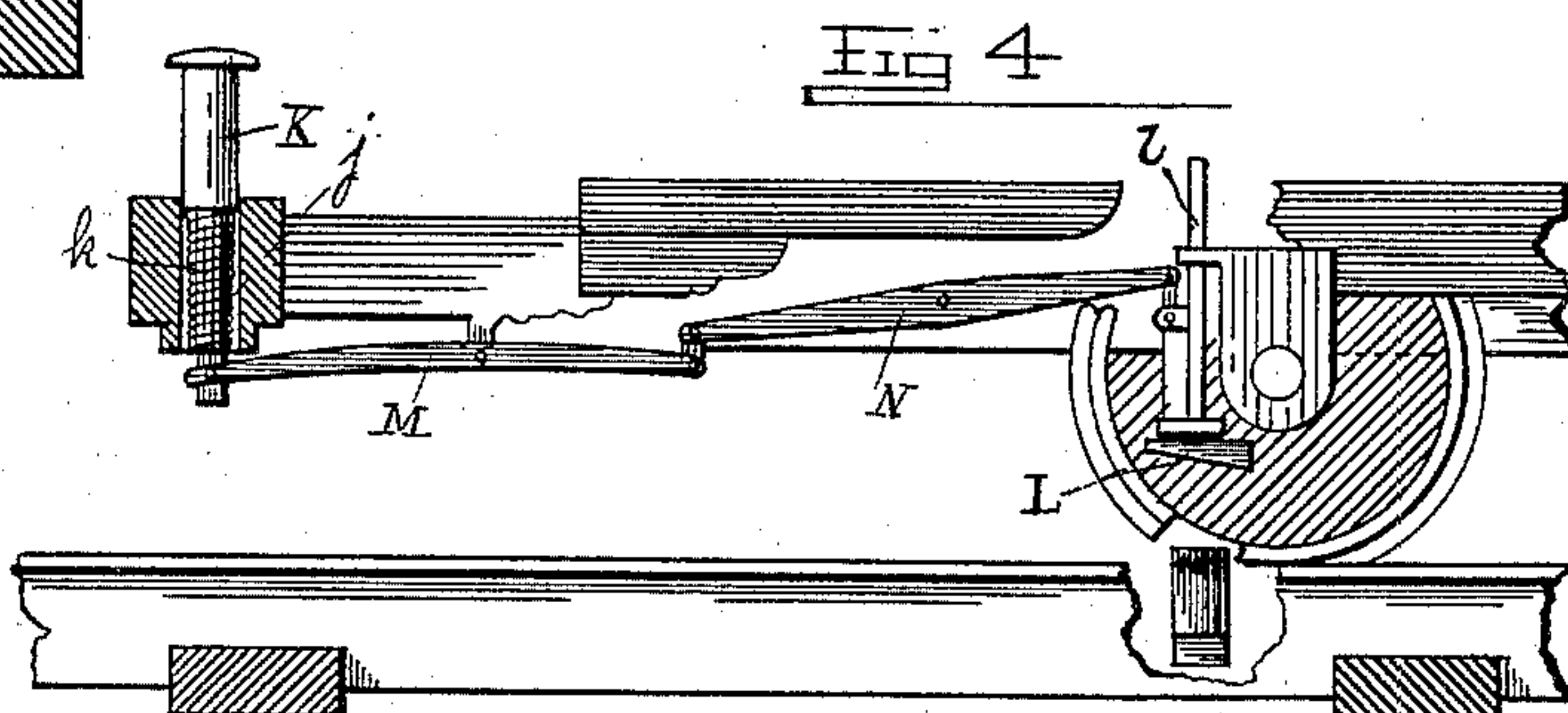
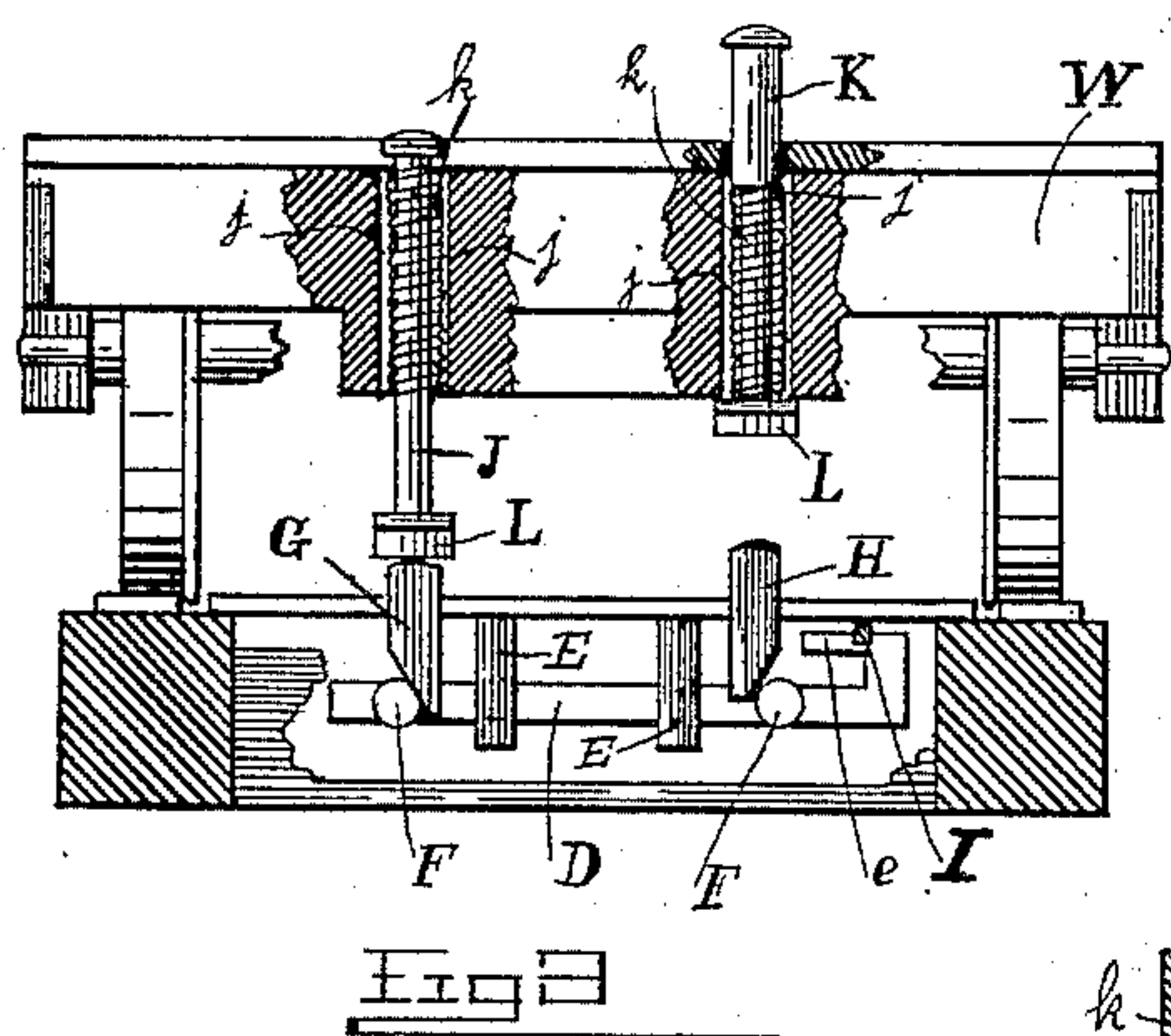
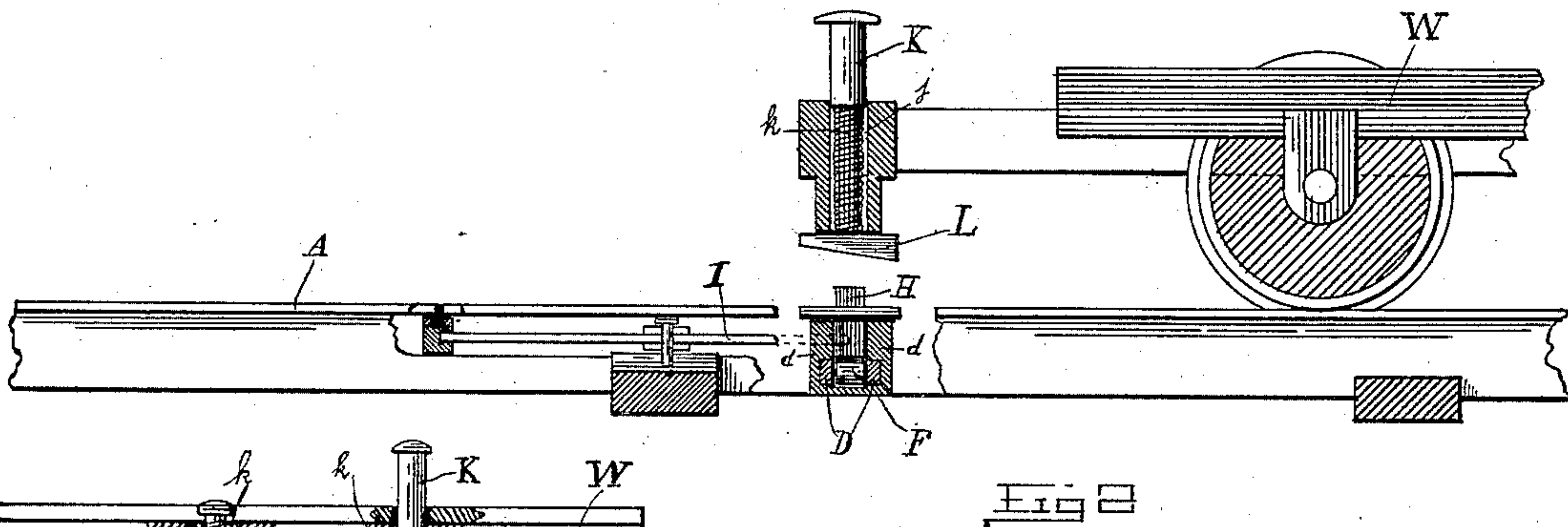
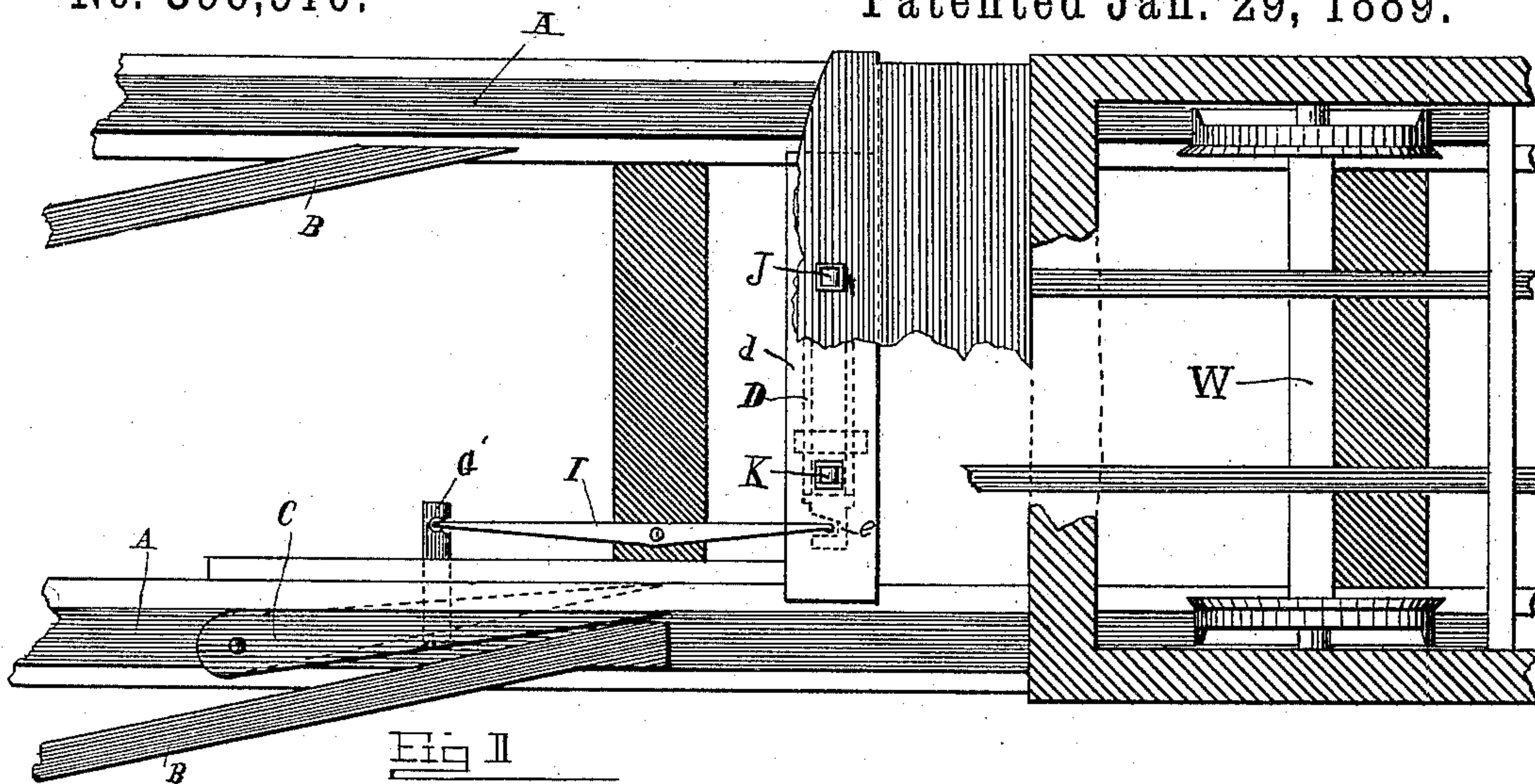


(No Model.)

C. A. BEACH.
TRAMWAY SWITCH.

No. 396,910.

Patented Jan. 29, 1889.



WITNESSES.

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TRAMWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 396,910, dated January 29, 1889.

Application filed November 13, 1888; Serial No. 290,760. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. BEACH, of Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Railway-Switches; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification, in which—

Figure 1 is a sectional plan view of a tramway-switch and portion of a car, illustrating my switch-operating mechanism. Fig. 2 is a sectional side elevation of the same. Fig. 3 is a cross-sectional view. Fig. 4 is a sectional view of a modification.

This invention is an improvement in tramway-switches, being especially designed for street-railways, and its objects are to improve the operating mechanisms of a switch and to provide means for actuating the switch from the car by the depression of one of two studs, as more fully hereinafter specified.

The invention consists in the novel construction of the switch-operating mechanism and combination of parts hereinafter described and claimed.

A in the drawings designates the main track, and B a branch track, and C is a switch-block pivoted at rear in the line of one of the main-track rails and adapted to be swung to form a continuation of such rail, or to be shifted to one side and act as a shunt-guide to direct a car onto the branch track, as usual.

D designates a frame or bar inclosed in a suitable casing, *d*, and lying transversely of the main track and below the rails thereof in front of switch C. Frame D is hung by or in stirrups E E or in other suitable manner, so as to be permitted a free longitudinal movement in the casing, and one end of said frame is provided with an upstanding portion, *e*, for a purpose hereinafter stated.

F F are two frictional rollers journaled in frame D near the opposite ends thereof, and G H are two blocks playing vertically through suitable guides in casing *d* and having their lower ends oppositely beveled, as shown, and engaging, respectively, the inner faces of rollers F F. When either block is depressed, its

beveled face engages the corresponding friction-roller F and forces the frame D to move longitudinally to the right or left, as the case may be, and this movement of the frame causes the opposite block to ride up on its friction-rollers, so that when one block is forcibly depressed to shift the frame the other block is simultaneously elevated by the movement of the frame. Inclines might be employed in lieu of the rollers to operate with the beveled ends of the blocks; but the rollers are preferable, as there is less friction to overcome.

To the upstanding portion *e* of frame D is loosely connected the front end of a horizontal bar, I, lying parallel with the line of the main track and pivoted centrally on a suitable block or support, as shown. The opposite end of said bar is loosely connected to plate G', attached to switch-block C, as indicated. Now, when frame D is shifted to the right by the depression of block G, the switch-block is in the position shown in Fig. 1 and the main track clear; but when the block H is depressed frame D is shifted to the left and block C is thrown to the position indicated in dotted lines, Fig. 1, so that the cars moving toward said block will be shifted onto the side-track. In order to accomplish this shifting of block C from the cars, I employ the devices shown in Figs. 3 and 4.

In Fig. 3, J and K represent two vertical standards playing through tubes or boxes *j j* in the platform of the car W and upheld by springs *k k*, as shown.

L L are inclined or beveled shoes on the lower ends of said standards, which are adapted to engage the blocks G or H when their respective standards are depressed.

In operation the driver of the car approaching the switch depresses either standard, and its shoe L is thus in position to engage the upper end of block G or H, one of which always projects above the casing. As the shoe passes over the block, the latter is forced down by the inclined face of the shoe and shifts block C, as before described, ere the truck-wheels have reached the switch. The driver can thus readily and effectively actuate the switch from the car without using his hands. The springs K elevate the standards and shoes as soon as released by the foot of the driver.

In order to avoid any possibility of the switch not being properly worked during the passage of a car, owing to the oscillation thereof, as is common in long tram-cars, I employ
 5 an arrangement similar to that shown in Fig. 4, in which the shoes L are mounted on vertically-movable standards l, just in front of the axles, and these standards are connected by a series of pivotally-connected levers, M and
 10 N, with the standards J K, which are arranged as before described, and in this case when either standard J or K is depressed the corresponding standard l, with its shoe, is lowered, the operation of the parts being the same as
 15 that just described.

Having described my invention, what I claim as new is—

1. The combination of the switch-block and the pivoted bar connected therewith with the
 20 longitudinally-movable frame located in front of the switch-block and connected to said bar, and the vertically-movable blocks having oppositely-inclined faces engaging and operating said frame, and the devices, substantially
 25 as described, on the car for depressing either of said blocks, substantially as and for the purpose specified.

2. The combination of the movable frame, the friction-rollers mounted thereon, and the
 30 vertical blocks having oppositely-beveled faces engaging the opposite friction-rollers of said frame with the switch-block in rear of said frame and the horizontal pivoted bar having one end pivotally connected with said
 35 block and its other end pivotally connected to said frame, substantially as described.

3. The combination of the switch-block, the longitudinally-movable frame located transversely in the main track, and the vertically-

movable blocks for shifting said frame with
 40 spring-controlled standards mounted on a car and provided with inclined shoes adapted to be brought into contact with the blocks to depress the latter during the passage of a car
 45 thereover, and thus shift the switch, all substantially as specified.

4. The combination of the longitudinally-movable frame and its casing, its supports and friction-rollers, and the vertically-movable blocks having oppositely-beveled faces en-
 50 gaging the said rollers and adapted to shift the frame when depressed, with the pivoted bar connected to said frame and actuated thereby, and the switch-block in rear of the frame and connected to the opposite end of
 55 said bar, and the devices, substantially as described, for operating either block from a car, substantially as and for the purpose described.

5. The combination of the longitudinally-movable frame and the friction-rollers in the
 60 opposite ends thereof, the opposite blocks having beveled faces engaging said rollers and adapted to shift the frame when depressed, with the pivoted bar connected to one end of
 65 said frame, the switch-block, the link connecting said bar and switch-block, and the spring-supported standards carrying inclined shoes on their lower ends adapted to engage
 70 said blocks when depressed and cause the shifting of the switch, substantially as and in the manner specified.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

CHARLES A. BEACH.

Witnesses:

JOSEPH W. KEEFER,
 JNO. TEMPLETON.