

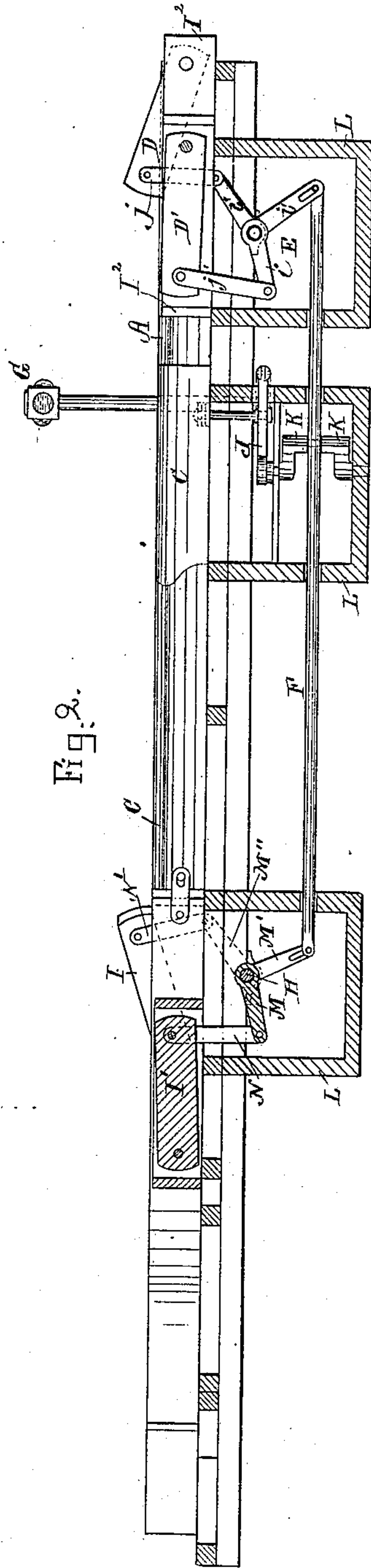
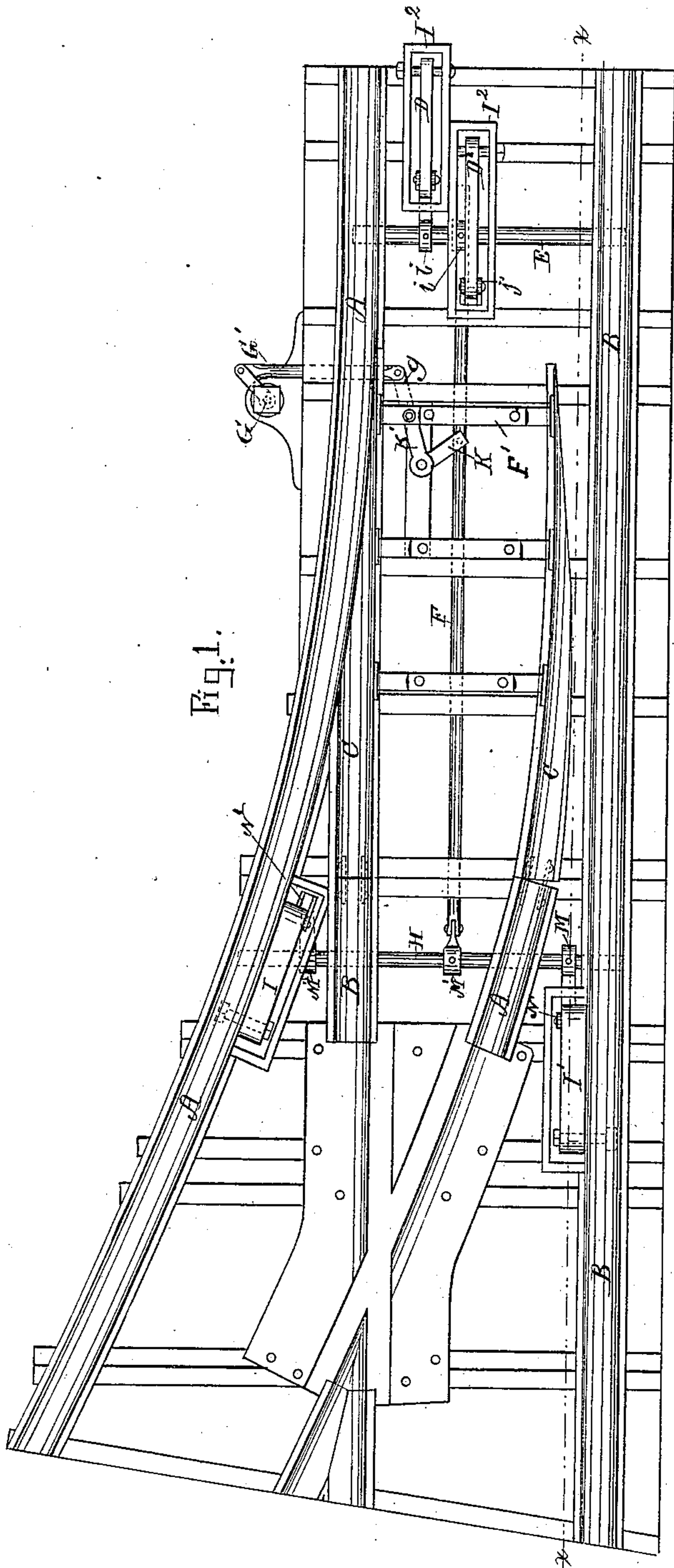
(No Model.)

2 Sheets—Sheet 1.

B. C. ROWELL.
RAILROAD SWITCH.

No. 333,258.

Patented Dec. 29, 1885.



Witnesses,

Chas. F. Light.
Jonathan Dorr

Inventor

Benton C. Rowell.

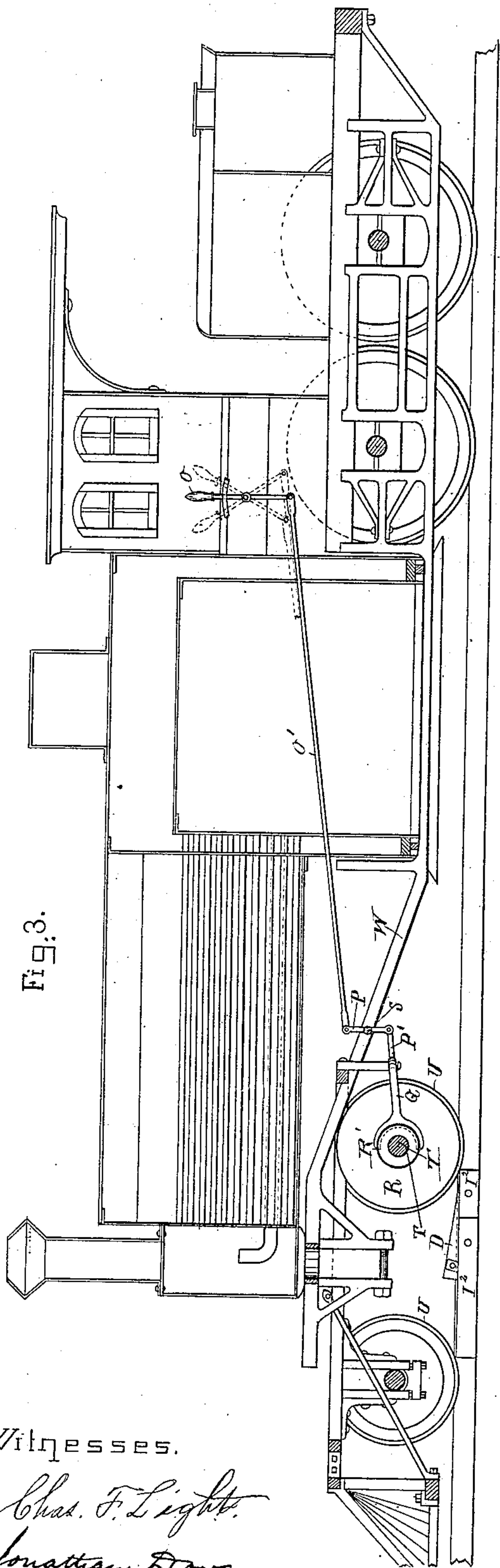
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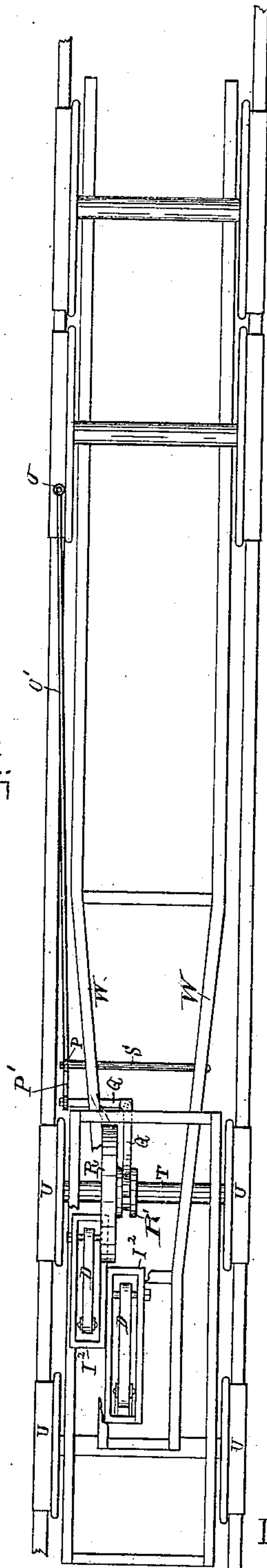
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Fig. 4.



Inventor.

Benton & Rowell

UNITED STATES PATENT OFFICE.

BENTON C. ROWELL, OF BOSTON, MASSACHUSETTS.

RAILROAD-SWITCH.

SPECIFICATION forming part of Letters Patent No. 333,258, dated December 29, 1885.

Application filed November 26, 1884. Serial No. 118,957. (No model.)

To all whom it may concern:

Be it known that I, BENTON C. ROWELL, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Railroad-Switches, of which the following is a specification.

The object of my invention is to provide a means for operating a railroad-switch from the cab of a locomotive, under the control of the engineer of the locomotive, and while the train is in motion, at whatever rate of speed.

The invention consists in the employment of an inner wheel placed upon the rear axle of the forward truck of a locomotive-engine and between the wheels of said axle. The said inner wheel is allowed a certain lateral movement upon the axle, so as to come in contact with and press down one of two inclined levers, as required, the said levers being placed on the track between the rails, and connected by a system of levers and rods with the free ends of the switch-rails. The said inner wheel is caused to move to one side or the other, when required, to press down one or the other of the inclined levers, by means of a crank and lever connected to a rod or bar extending back into the cab of the locomotive, where it is connected to a hand-lever to be operated by the engineer.

Referring to the accompanying drawings, Figure 1 is a plan view of a portion of a railroad track and switch embodying my invention, the switch being set to the main track. Fig. 2 is a longitudinal section of the operative parts of the switch at and below the track. Fig. 3 is a longitudinal section of a locomotive, showing the central wheel and its connection with a lever in the locomotive-cab. Fig. 4 is a plan of the track and the switch attachments under the locomotive.

Similar letters indicate like parts in the several figures.

B B represent the rails of the main track, A A the rails of a side track, and C C the switch-rails.

D D' are two bars or levers pivoted to cross-bars in the track, and are placed between the rails of the main track. The said levers are so arranged and connected that while one is inclined upward the other is parallel with the rails B B, as indicated in Fig. 2. The levers

D D' are inclosed in casings I² I², for protection against dust, &c.

E, Figs. 1 and 2, is a shaft or bar extending across the track. To the shaft E are secured three crank-arms, *i i i'*, and to the ends of the arms *i i* are pivoted the links *j j'*. The other ends of the links *j j'* are pivoted, respectively, to the free ends of the levers D D'. The end of the arm *i'* is provided with a slot, through which passes a pin in the end of a bar or rod, F, which passes forward and is connected to a crank-lever, M, for a purpose hereinafter described. To the bar or rod F is pivoted an arm, K, of a bell-crank lever, K K', and the end of the arm K' is pivoted to the tie-bar F', which connects the two free ends of the switch-rails C C. To the arm K' is also connected a bar, *g*, to which is pivoted one end of an arm, G', which is connected to a signal, G, of well-known construction, and which indicates the position of the switch on approaching the same. At a short distance from the other end of the switch is a bar or shaft, H, to which are secured crank-arms M M', the arm M being connected by a bar, N, to the free end of a lever, I', and on the opposite end of the shaft H is a similar crank-arm, M'', and link *h'*, similarly connected with the lever I, by which means a locomotive coming in the opposite direction will, by depressing the lever I or I', cause the shaft H to move the rod F, and thereby open or close the switch, as may be required. The levers I I' are placed inside and next to the rails, respectively, and are operated by the wheels of the locomotive.

The operative mechanisms below the track are inclosed in boxes or casings L L L, for protection against injury.

Upon the rear axle, T, of the forward truck of the locomotive, and between the wheels of the same, is placed a wheel, R. (See Figs. 3 and 4.) This wheel is allowed to slide on the axle T, so as to change its position on the same to the right and left, as required. At one side of the wheel R is secured, or it may form part of the same, a grooved shipper, R'.

Q is a crank-lever, having arms which fit in the grooved shipper. One end of the crank-lever Q is pivoted to the lever P P', which is fulcrumed on a shaft, S, supported in bars on the under side of the locomotive. To the opposite end of the shaft S is pivoted a rod, O',

that extends back into the cab of the locomotive, and is connected with a lever, O, in the cab of the locomotive, so as to be readily operated by the engineer.

5 By my improved arrangement of parts, and connecting the levers which are to be operated upon by the locomotive with the switch-rails by means of a single rod through a series of bell-crank levers and interposed rods, I am
10 enabled automatically to practically operate a switch with greater facility and much less wear and strain upon the various parts of the mechanism than has been heretofore accomplished by any of the contrivances in use.

15 What I claim as my invention is—

1. As an improvement in the means for operating railroad-switches automatically, the combination of four operating-levers, D D' and I I', and the switch-rails of a railroad-track by
20 positively connecting them together through bell-crank levers with a single connecting-rod, F, the levers D D' and I I' having respectively interposed between them and the bell-cranks the connecting links or rods j j' and

N N', all combined substantially as shown and
25 described, whereby the switch may be operated in the manner described, through the single rod F, by the depression of either of said operating-levers by the passage of a locomotive.

2. The combination of the levers D D', the bar F, and their intermediate connections, the crank K, bar F', connecting-rods g, bar G', and signal G, as and for the purpose set forth. 30

3. The combination, with the levers D D',
35 of the wheel R on the shaft T of a locomotive, the crank-lever Q, the lever P P', rod O', and lever O, located in the cab of a locomotive, whereby the switch C C can be operated by the engineer, substantially as set forth. 40

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

BENTON C. ROWELL.

Witnesses:

J. H. ADAMS,
CHAS. F. LIGHT.