

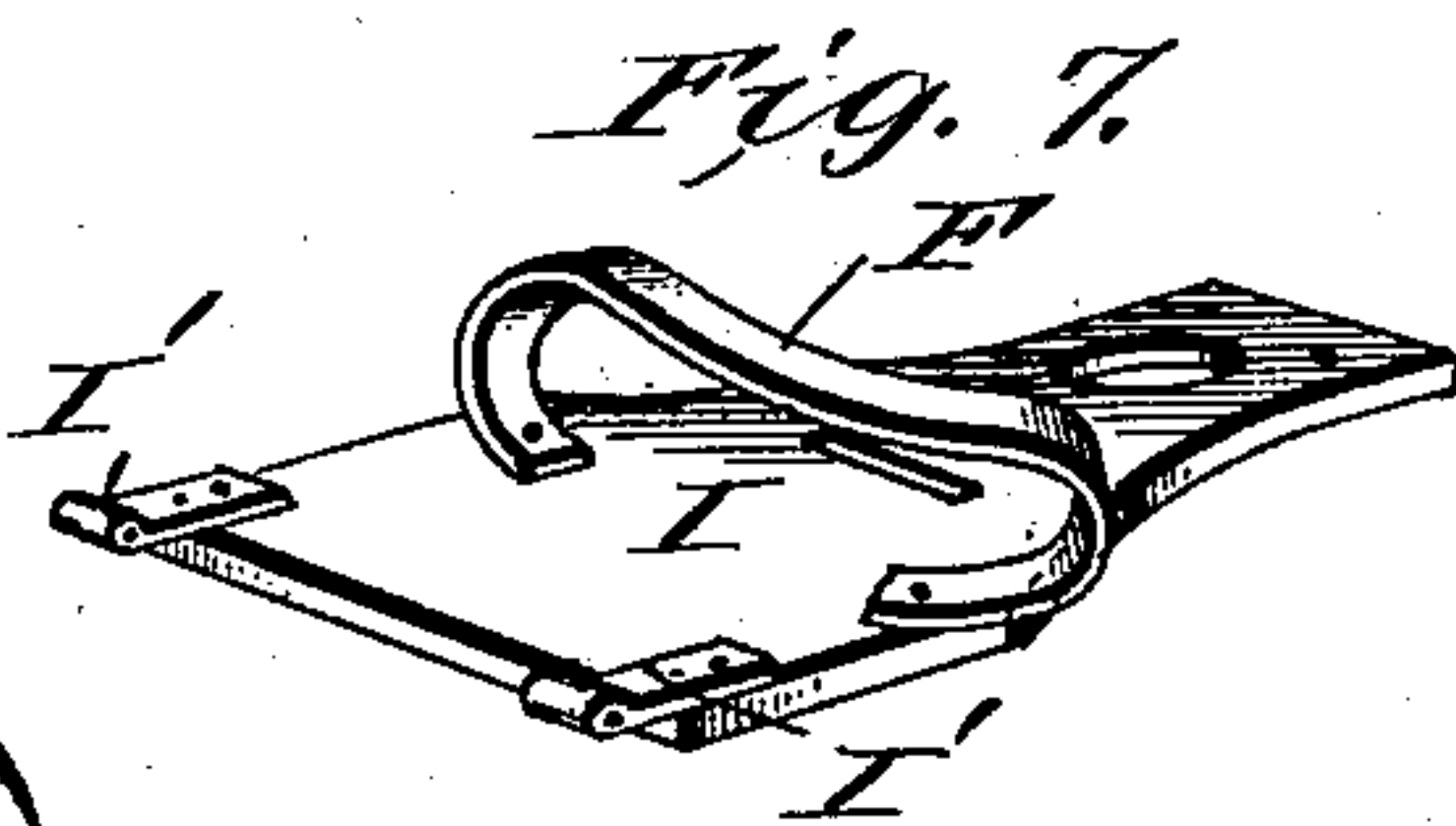
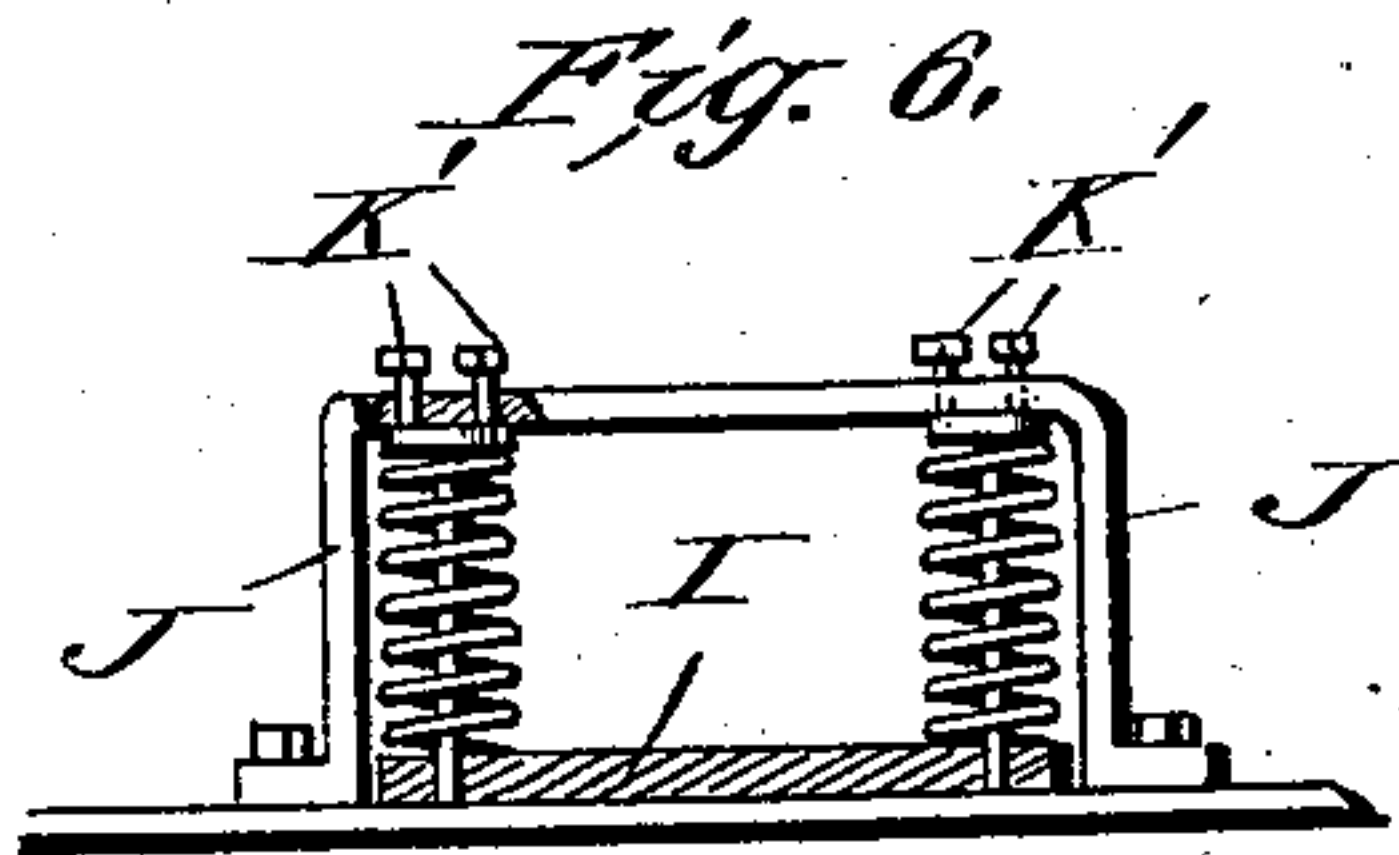
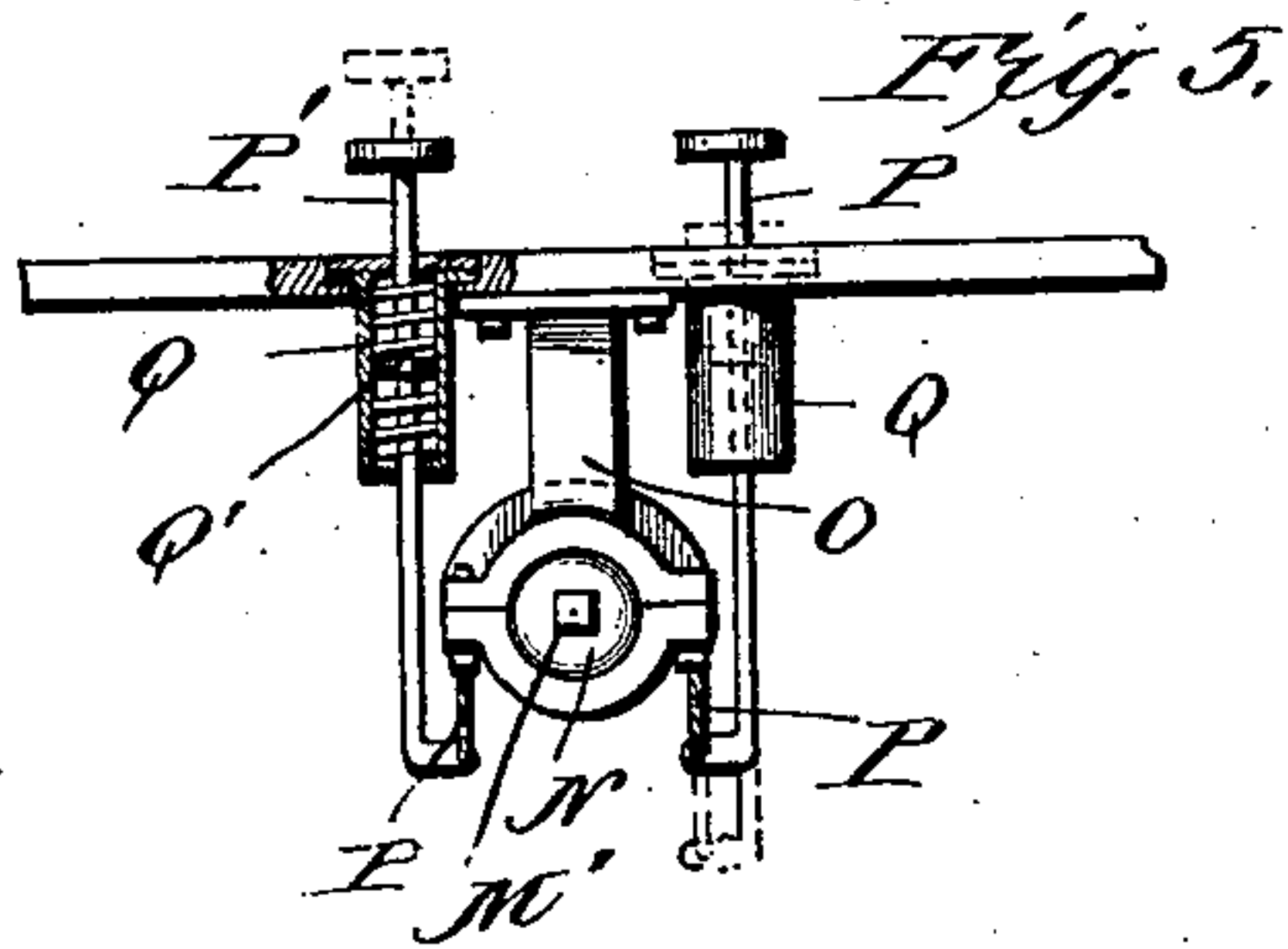
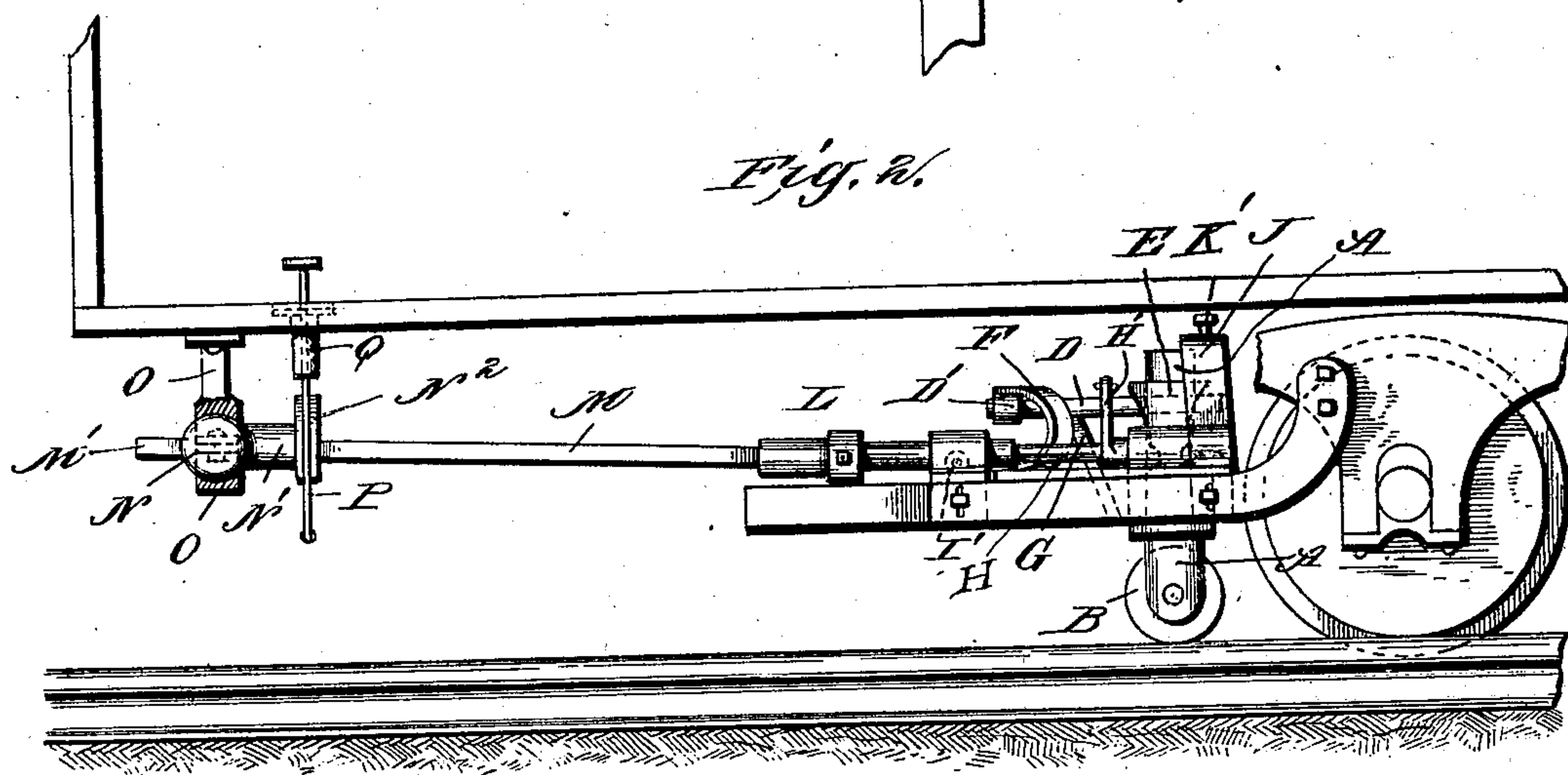
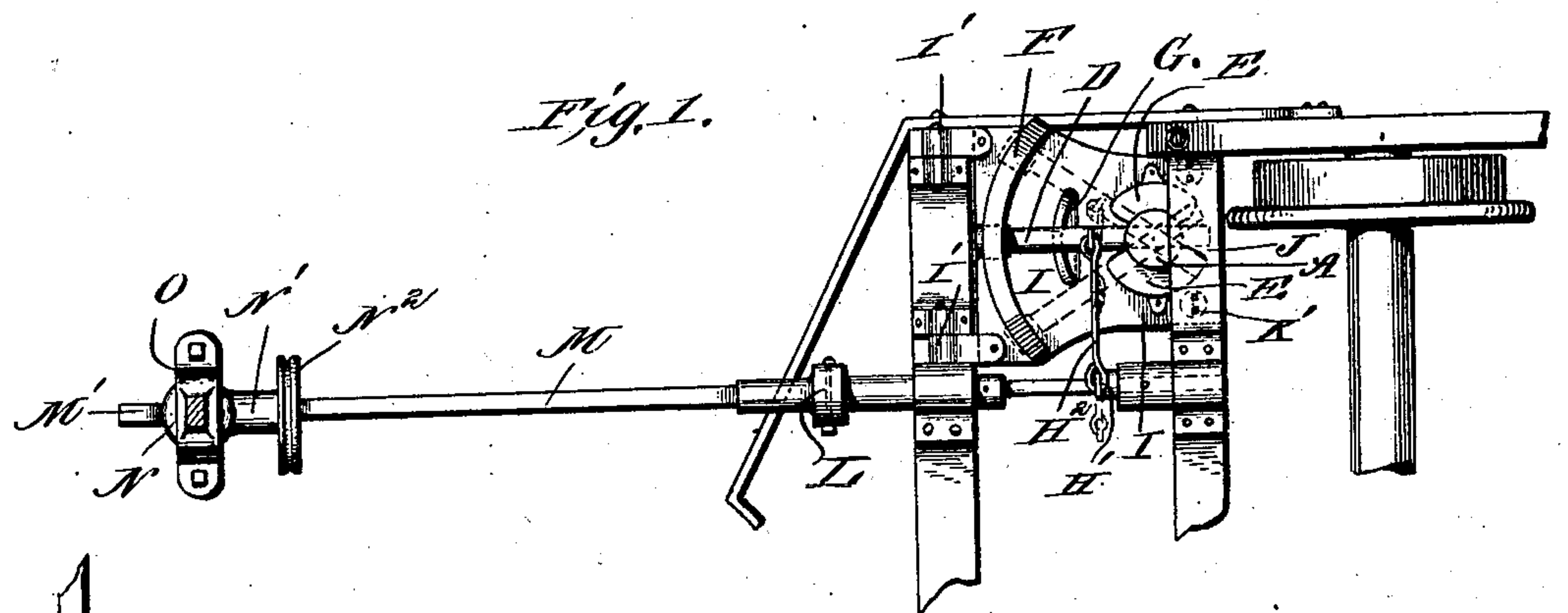
No. 724,359.

PATENTED MAR. 31, 1903.

J. M. WILBUR.
SWITCH OPERATING MECHANISM.
APPLICATION FILED DEC. 31, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:
Fredt Bradford,
Perry B. Turpin.

INVENTOR
John M. Wilbur.

BY *Munn & Co.*
ATTORNEYS.

No. 724,359.

PATENTED MAR. 31, 1903.

J. M. WILBUR.
SWITCH OPERATING MECHANISM.

APPLICATION FILED DEC. 31, 1902.

NO MODEL.

2 SHEETS—SHEET 2.

Fig. 3.

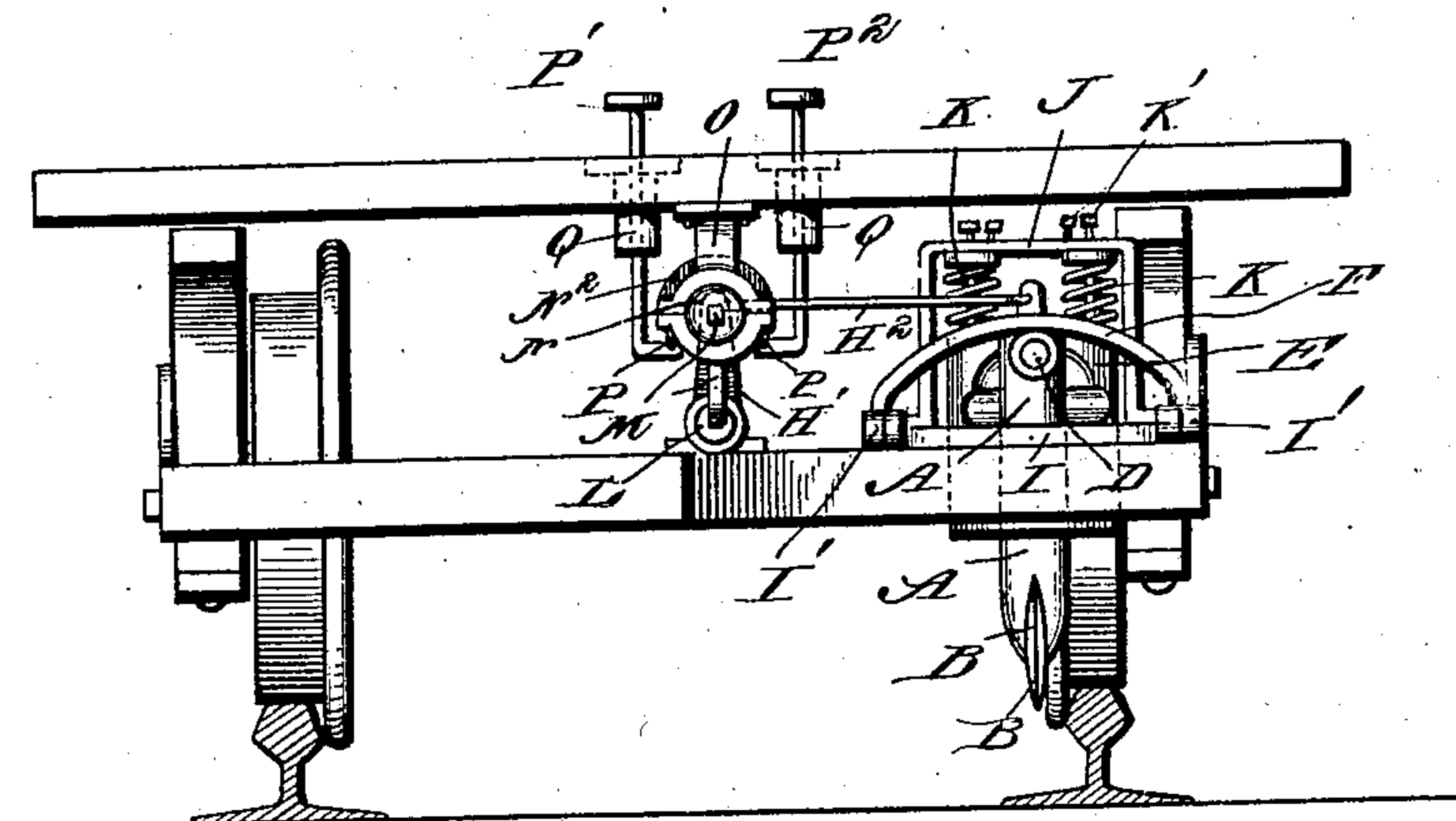
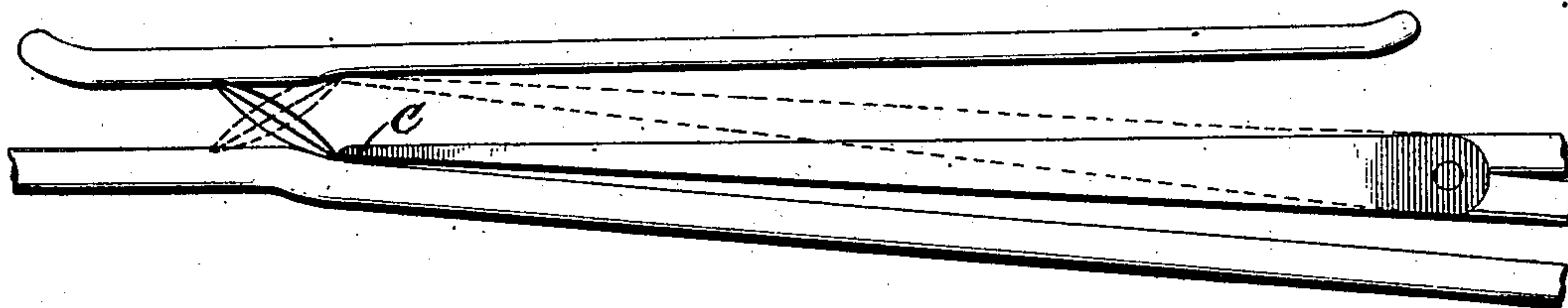


Fig. 4.



WITNESSES:

Fred. D. Bradford
Perry B. Lurpin

INVENTOR

John M. Wilbur

BY *Munn & Co.*

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN M. WILBUR, OF COLORADO SPRINGS, COLORADO, ASSIGNOR OF TWO-THIRDS TO FRED B. WILBUR AND CHARLES MINIUM, OF EL PASO COUNTY, COLORADO.

SWITCH-OPERATING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 724,359, dated March 31, 1903.

Application filed December 31, 1902. Serial No. 137,315. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. WILBUR, a citizen of the United States, and a resident of Colorado Springs, in the county of El Paso and State of Colorado, have made certain new and useful Improvements in Switch-Operating Mechanism, of which the following is a specification.

This invention is an improvement in switch-operating mechanism and especially in the class of such mechanism illustrated in my former application for patent, which was filed in the United States Patent Office May 12, 1902, Serial No. 106,899, the present invention relating particularly to the means for supporting and operating the mechanism constituting the switching devices; and the invention consists in certain novel constructions and combinations of parts, as will be hereinafter described and claimed.

In the drawings, Figure 1 is a bottom plan view, Fig. 2 is a side view, and Fig. 3 is a front view, of the mechanism embodying my invention. Fig. 4 is detail view of a portion of the switch. Fig. 5 is a detail view, partly in section, showing the means for operating the main shaft. Fig. 6 is a detail view, partly in section, illustrating the means for yieldingly supporting the base-plate; and Fig. 7 is a detail perspective view of the base-plate with the vertically and longitudinally curved guide thereon.

In the present invention I employ the mechanism for directly operating the switch-point substantially as shown in the application for patent before referred to, using in the present instance the upright shaft A, bearing at its lower end the vertically-edgewise disk B to operate the switch-point C when directed thereto, as indicated in full and dotted lines in Fig. 4, the swinging and rocking cross-shaft D, engaged at one end with the upper end of the upright shaft, the guide devices at E for engagement with one end of the cross-shaft, the vertically and longitudinally curved guide F for engagement by the other end of the cross-shaft, such end having a roller D', as shown, and a curved fulcrum or bearing G for the middle of said cross-shaft, the parts being so arranged that as the cross-

shaft D is rocked from the position shown in Figs. 1 and 2 to one side or the other it will turn the upright shaft A to one or the other position shown in Fig. 4 and will at the same time lower such shaft from the position shown in Fig. 2 to a position in which the disk B will engage with the free end or extremity of the switch-point C, as will be understood from Fig. 4 of the drawings, in order to throw the switch-point in one direction or the other, as may be desired. In the present invention the shaft D instead of extending in a direction transverse that of the car extends in the direction of length of the car and is operated from a connecting-shaft H, having a crank-arm H', connected by a link H² with the shaft D, so the rocking of the shaft H will swing the shaft D to one side or the other, as may be desired.

In the use of the invention if the disk should come in contact with a lock-switch, a clogged switch, or a switch otherwise obstructed there would be danger of injury to the mechanism unless means were provided to permit the yielding of the disk and its upright shaft in case it should come in contact with an unyielding obstruction. To this end I prefer to mount the mechanism constituting the switch devices on a base-plate I, (see Fig. 7,) such base-plate I being hinged at its front end so its rear end can move vertically upward, and such rear end of the base-plate I projects in an arch J. Springs K are arranged to operate between the arch and the upper side of the plate I, and the tension of its springs may be regulated by means of screws K'. (See Fig. 6.) With this construction it is evident that if the disk strikes an unyielding obstruction the base-plate I can rise in such manner as to permit the disk to ride over the obstruction, and thus avoid injury to any of the parts.

The intermediate shaft H is mounted in bearings on the truck and is connected at its front end by a knuckle-joint L with the operating-shaft M, whose front end is made square or otherwise non-circular and slides at M' through a ball N, mounted in bearings O in the bracket depending from the platform of the car, and this ball N thus provides a uni-

versal joint for the front end of the shaft M and is provided with a tubular extension N', having a pulley N², to which are connected cables P, arranged for operation by the opposite treadles P' and P², projecting above the platform of the car and through casings Q, in which are provided springs Q' to operate the treadles yielding in both directions. By the described construction the independent movements of the truck and platform will not interfere with the operation of the switching mechanism, and the universal joint at N and the knuckle-joint at L permit the independent movements of the truck and platform in rounding curves.

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

1. The improvement in switch-operating mechanism herein described, consisting in the combination with the truck, of the bed-plate hinged at its front end to the car-truck, the arch on the car-truck and extending over the rear end of the bed-plate, the springs bearing between the arch and bed-plate, the upright shaft provided at its lower end with means for operating the switch-point, the cross-shaft connected with the upright shaft, the vertically and longitudinally curved guide on the bed-plate for the cross-shaft, the curved fulcrum or bearing for the cross-shaft between the curved guide and the upright shaft, the intermediate shaft provided with the crank-arm, a connection between said crank-arm and the cross-shaft, the upright shaft, the knuckle-joint between the upright shaft and the intermediate shaft, the ball having an opening through which the operating-shaft extends and provided with the tubular extension and a pulley thereon, the opposite treadles supported by the car-platform and connected with such pulley, and the bracket on the car-platform and having a bearing for the said ball, substantially as set forth.

2. The combination with the car-truck and the platform; of the switch-operating devices, the bed-plate supporting said devices and hinged at its front end to the car-truck, springs for resisting the upward movement of the rear end of said bed-plate, an operating-shaft supported on the platform, and

connections between said shaft and the switch-operating devices carried by the bed-plate substantially as set forth.

3. The combination in a switch-operating mechanism with the switching devices, of a plate supporting the same, means for yieldingly holding the plate down to operative position whereby the said plate may yield upwardly when the devices meet an obstruction, and devices for operating the switching devices, substantially as set forth.

4. The combination with the truck, and the car-platform, of the switching devices supported on the car-truck, and the operating-shaft carried by the car-platform, and universally and slidably connected with said platform, connections between the operating-shaft and the switching devices and means whereby the operating-shaft may be turned substantially as set forth.

5. The combination of the car-truck, the platform, the switching devices supported on the car-truck, the operating-shaft connected at one end with the switching devices, a ball through which the other end of the operating-shaft may slide, and means for turning the said ball whereby to turn the operating-shaft, substantially as set forth.

6. The combination of the car-truck, the car-platform, the switching devices on the car-truck, the operating-shaft connected at one end with the switching devices, a ball supported by the car-platform, and having an opening through which the operating-shaft may slide longitudinally, a pulley connected with said ball, and treadles connected with said pulley and arranged to operate the same, substantially as set forth.

7. The combination with the car-truck, the switching devices, and means for operating the same, of the bed-plates supporting the switching devices and hinged at one end to the car-truck, and springs for resisting the vertical movement of the other end of the said bed-plate, whereby the latter is yieldingly supported at such end, substantially as set forth.

JOHN M. WILBUR.

Witnesses:

C. LEON MCKESSON,
N. N. BRUMBOCK.