

No. 720,090.

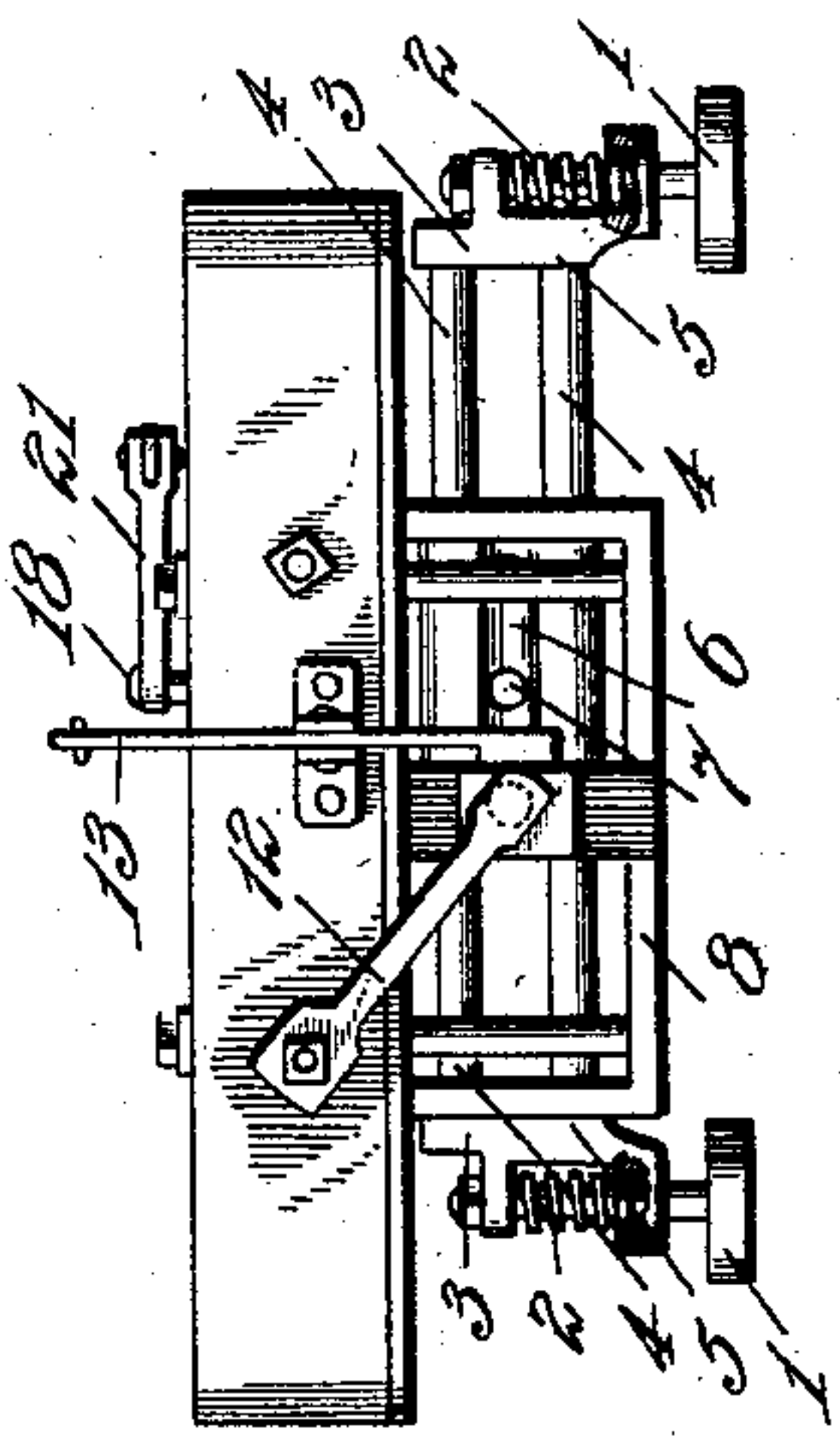
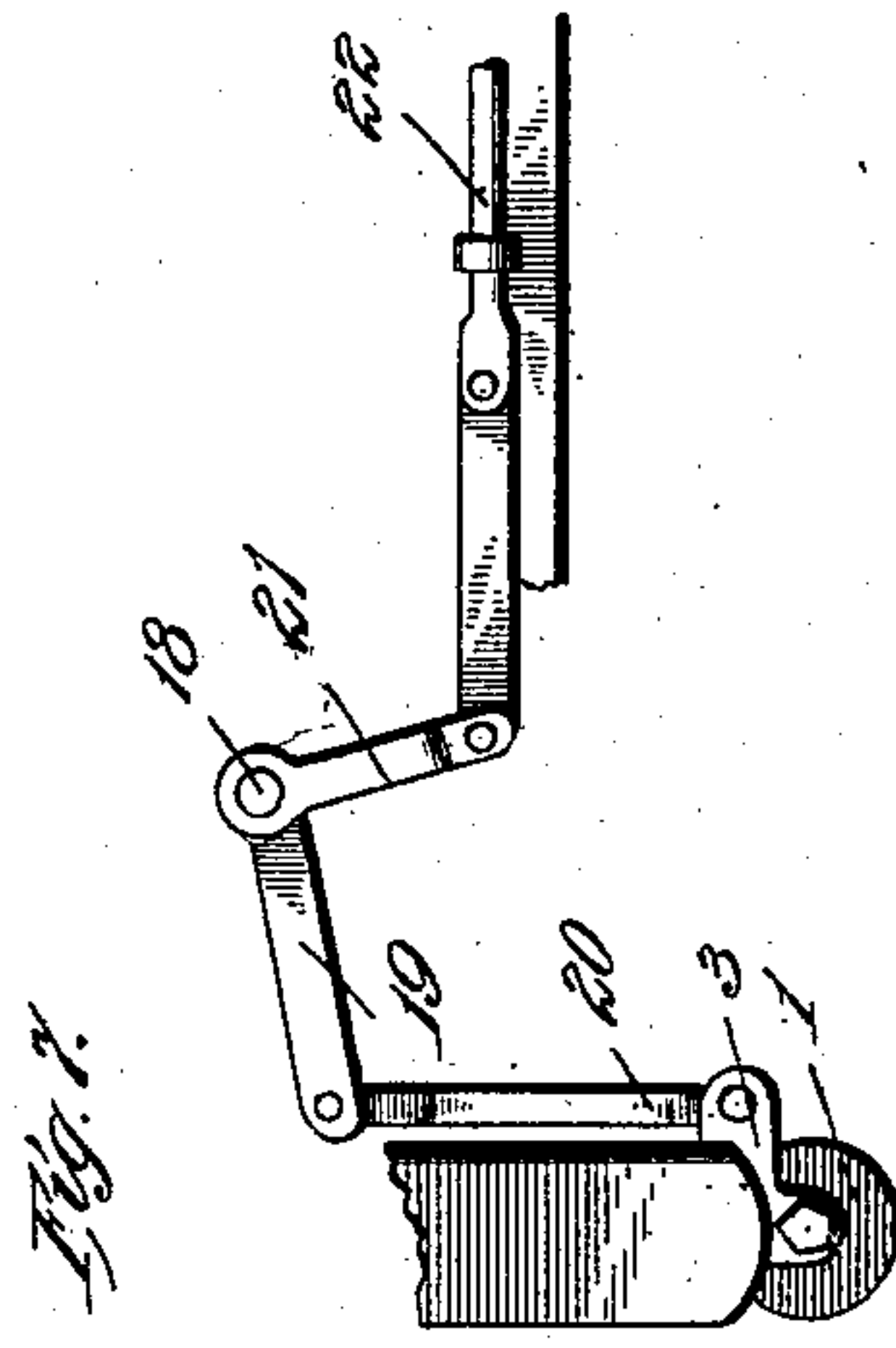
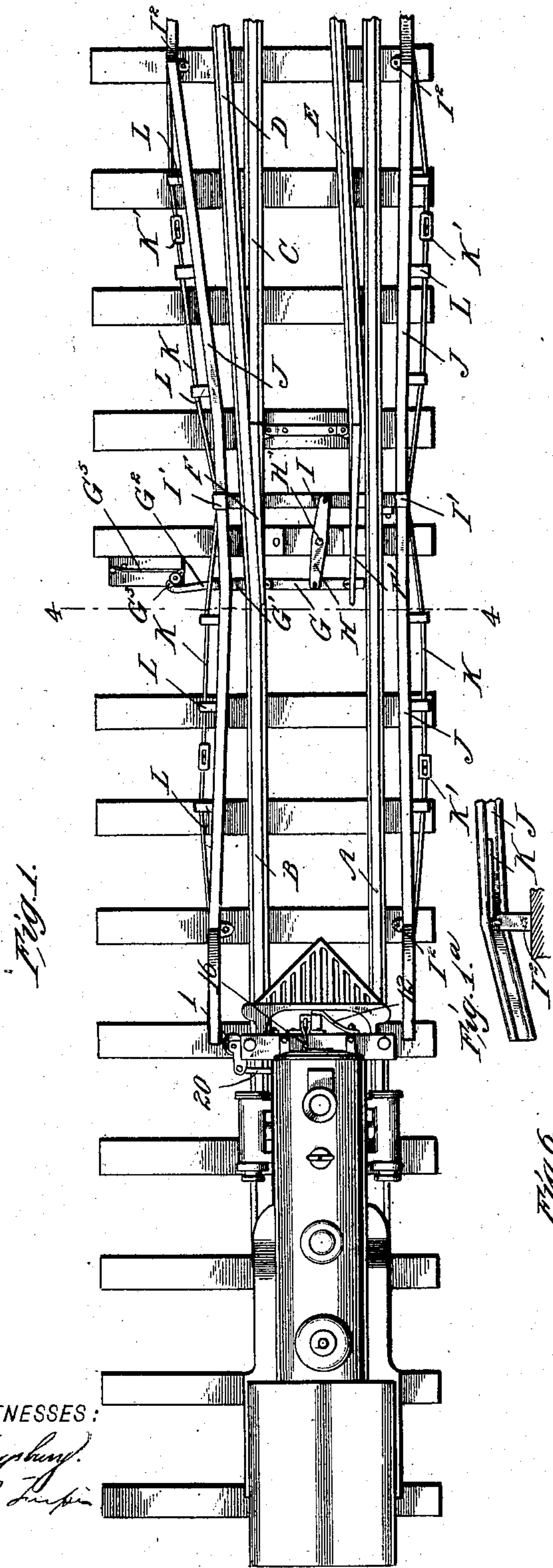
PATENTED FEB. 10, 1903.

A. YOUNGBLOOD.
RAILWAY SWITCH.

APPLICATION FILED MAY 13, 1902.

NO MODEL.

3 SHEETS—SHEET 1.



WITNESSES:
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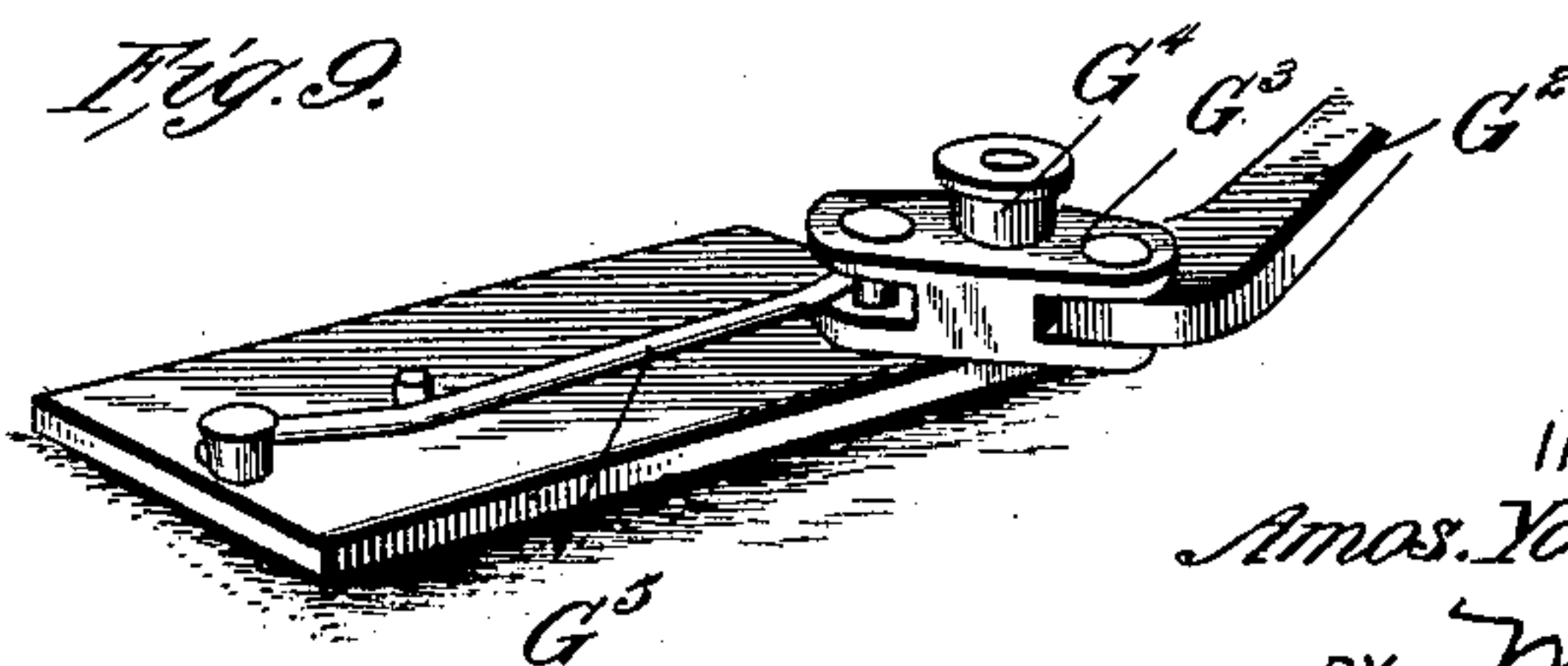
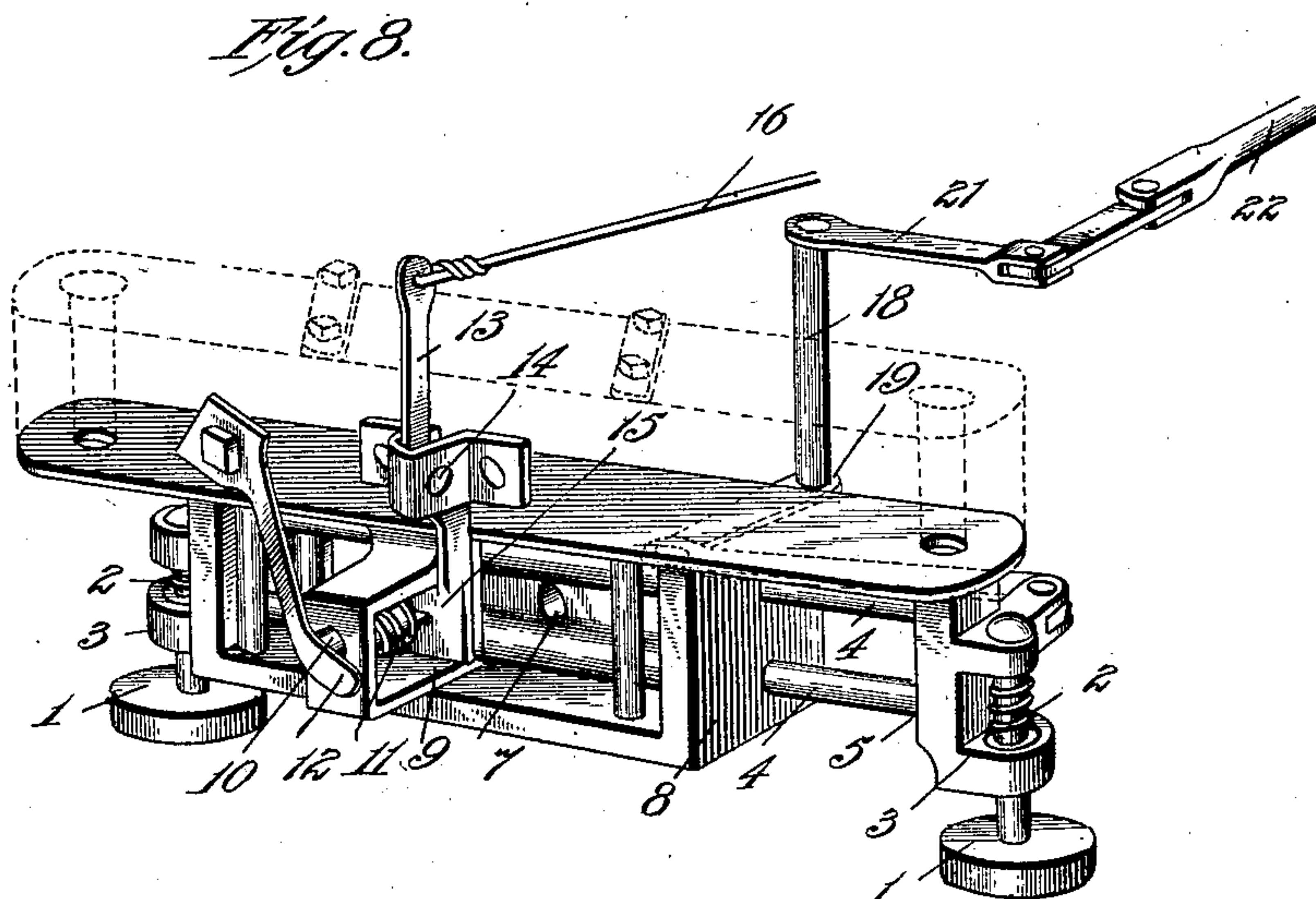
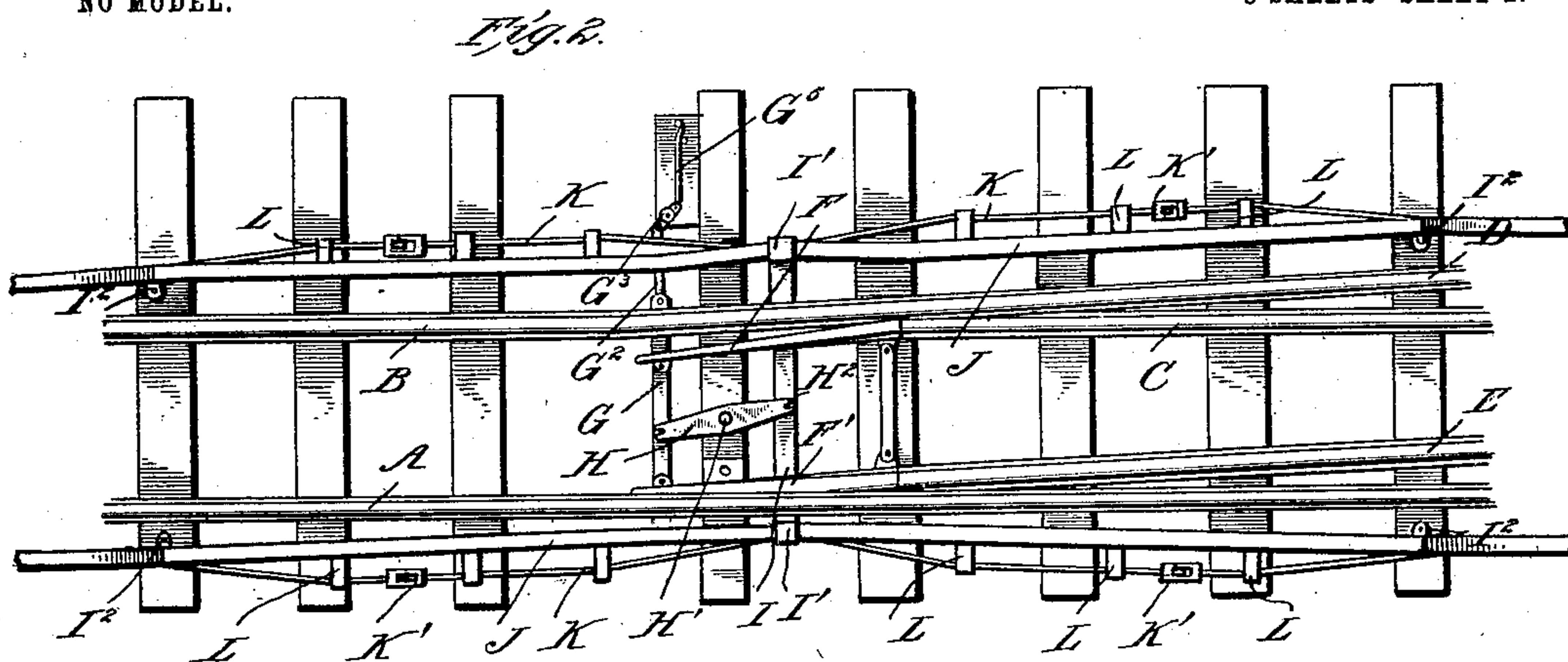
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A. YOUNGBLOOD.
RAILWAY SWITCH.

APPLICATION FILED MAY 13, 1902.

NO MODEL.

3 SHEETS—SHEET 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

AMOS YOUNGBLOOD, OF NORTH AUGUSTA, SOUTH CAROLINA.

RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 720,090, dated February 10, 1903.

Application filed May 13, 1902. Serial No. 107,075. (No model.)

To all whom it may concern:

Be it known that I, AMOS YOUNGBLOOD, a citizen of the United States, and a resident of North Augusta, in the county of Aiken and State of South Carolina, have made certain new and useful Improvements in Railway-Switches, of which the following is a specification.

My invention is an improvement in railway-switches; and it consists in certain novel constructions and combinations of parts, as will be hereinafter described and claimed.

In the drawings, Figure 1 is a top plan view showing the switch and the operating devices, with the main line open. Fig. 2 is a top plan view of the switch-track, showing the track open to the siding or switch. Fig. 3 is a side view of the locomotive provided with the devices for automatically shifting the switch-points. Fig. 4 is a detail cross-section on about line 4 4 of Fig. 1. Fig. 5 is a detail enlarged section illustrating the connection between the switch-bar and one of the cam-bars for operating such switch-bar. Fig. 6 is a front elevation of the devices for automatically operating the switch. Fig. 7 is a bottom plan view illustrating a portion of the devices for automatically operating the switch. Fig. 8 is a detail perspective view of the devices for automatically operating the switch, and Fig. 9 is a detail perspective view illustrating the spring devices for securing the switch-points in their different adjustments.

In the construction shown, A, B, and C are the rails for the main line, and D and E are the siding or switch rails, and F and F' are the switch-points which communicate with the main-line rail C and the switch-rail E and are movable at their swinging ends to the position shown in Fig. 2 to open the switch or to the position shown in Fig. 1 to close the switch and open the main line, as is common in switches. These switch-points are connected by the connecting-bar G, extending between them near their free ends and engaged with one end of the rocking lever H, which is pivoted between its ends at H', and connects at its other end at H² with the switch-bar I, whose opposite ends are connected at I' with the meeting ends of the cam-bars J, which are arranged for operation by devices on the locomotive or other moving equipment, as will

be more fully described. The cam-bars J are connected at their meeting ends at I', are pivoted at their opposite ends at I², and are sloped or inclined between their ends I' and I², as shown. The bars J, being suitably sloped, with their inner sides convexed and their outer sides concaved, as shown in Figs. 1 and 2, are braced on their outer sides by the truss-rods K, secured at their opposite ends to the cam-bars, near the ends thereof, and preferably made in sections united by a suitable straining device K', such as a turn-buckle, as shown in Figs. 1 and 2. The truss-rod fits in notches or slots L' in the outer ends of lugs L, projecting outwardly from the cam-bars, and are thus kept in line with the cam-bars, as will be understood from Figs. 1, 2, and 4. The cam-bars are of angle metal, iron or steel, having the upright wing *j* and the top wing *j'* projecting outwardly from the upper edge of the upright wing *j*, as shown in Figs. 4 and 5. As shown, the lugs L are secured at their inner ends to the under side of the top wings *j'* and project outwardly, as shown. Near their meeting ends, which connect at I' with the switch-bar I, the bars J are provided with studs or projections J', which depend from the top wings *j'*, near the outer edges of said wings, as shown in Fig. 5, and are engaged by portions of the switch-bar I, as best shown in Fig. 5. In the construction shown in Fig. 5 and as preferred the switch-bar I, which is supported on antifriction-rollers M, is provided at its ends with upwardly-projecting wings N, which are provided with upper and lower arms O and P. The arm O overlies the cam-bar J, while the arm P projects into the hollow of said cam-bar and is provided with an upwardly-projecting portion P' for engagement by the inner side of the stud J', as shown in Fig. 5. In the construction of the cam-bars ordinary iron or steel rails may and probably will be used in practice. By the described construction it will be understood that as the cam-bars J are rocked on their pivots I² they will by the engagement of their inner ends with the switch-bar I operate through the described connections to shift the switch from one position, such as shown in Fig. 1, to the other position, such as shown in Fig. 2, or vice versa. At the same time the cam-bars are conven-

iently arranged so they will not be operated except when desired, are strengthened by the arrangement of the truss bars or rods, which can be adjusted and tightened to any desired
5 degree, and the operation of any one of the four cam-bars tends to set the switch as desired.

In order to hold the switch-points in their different positions, I extend the bar G at G' 10 and connect with it the pitman G², which is secured to one arm of a lever G³, said lever being pivoted between its ends at G⁴ and engaged at its end by a spring-rod G⁵, which tends to hold the lever in either of the positions shown in Figs. 1 and 2. If the parts be 15 in the position shown in Fig. 2, with the switch open, and a train approaches from the left which it is desired to direct along the main track, the operating devices on the train 20 should be set to engage the cam-bar J at the left end of the under side of the said Fig. 2, so it will as the train approaches the switch-points throw the cam-bars and switch-points to the position shown in Fig. 1, thus opening 25 the main line, as shown in Fig. 1.

For operating the cam-bars I provide what for convenience of reference I term the "operating projections" 1, which are shown in the form of disks, having shafts 2 journaled 30 in bearing portions 3 at the opposite ends of the rods 4 of the carrier 5. Between their ends the rods 4 are connected by a bar 6, which has a number of holes 7, which can be entered by the detent-bolt presently described. The rods 4 slide laterally in the 35 frame 8, arranged between the ends of the rods, so the operating projections 1, which are located outside of the frame 8, as shown in Figs. 6 and 8, can be set to the right or left 40 to engage the cam-bars on one or the other side of the track, as may be desired. The frame 8 has a boxing 9, in which is supported the bolt 10, which enters one or the other of the holes 7 and is pressed normally into one 45 of said holes by a coil-spring 11, operating within the box 9, or by the plate-spring operating upon the outer end of the bolt 10, as shown in Fig. 8, or by both springs, if desired. To release the bolt 10 from engage- 50 ment with the carrier 5, I employ a lever 13, pivoted at 14, and arranged at one end 15 to operate upon the bolt 10 to release the same and having its other end connected by a wire or rod 16 with a lever 17 in the cab of the lo- 55 comotive. To shift the carrier 5 laterally, I provide a rock-shaft 18, having a cam-arm 19, connected by a pitman 20 with the said carrier 5, and the second crank-arm 21, connected by a pitman or rod 22 with the lever 60 23 in the cab of the locomotive, as best shown in Fig. 3.

In the operation of the construction the lever 17 is first moved to release the detent 10, after which the lever 23 is operated to shift 65 the carrier 5 to its central neutral position or to the other side, as may be desired.

The construction is simple, easily operated,

and is efficient for the purpose for which it is designed.

Having thus described my invention, what 70 I claim as new, and desire to secure by Letters Patent, is—

1. In a railway-switch the combination with the main-line rails and the switch or side rails, 75 of the switch-points, the bar connecting said points, the pitman connected at one end with the switch-points, the lever with which the other end of said pitman is connected, the spring operating upon said lever to hold the switch-points in different adjustments, the 80 rocking lever pivoted between its ends and connected at one end with the bar which connects the switch-points, the switch-bar connected with the other end of said rocking lever and provided at its ends with the up- 85 turned wings having upper and lower rails, the cam-bars pivoted at their outer ends and engaged at their inner ends between the arms of said wings, said cam-bars being made of angle metal with inner upright wings and 90 top wings extending outwardly from the upper edges of the upright wings, and the truss-rods applied to said cam-bars substantially as set forth.

2. In a railway-switch and in combination 95 with the devices for operation thereby, the cam-bar sloped between its ends and provided in its hollow outer side with a truss-rod for bracing the same, substantially as set forth. 100

3. A cam-bar for automatic switches curved between its ends and provided with lugs projecting from its hollow or concave side and having seats in their outer ends, and the truss-rod for said cam-bar held in said seats, 105 substantially as set forth.

4. The combination of the switch-points, the switch-bar provided at its ends with up- 110 turned wings having inwardly-projecting upper and lower arms, the lower arm being provided at its free end with an upturned portion, and the cam-bars fitting at their adjacent ends between the said upper and lower arms and provided with depending studs for engagement with the upturned portion of the 115 lower arm of the switch-bar, substantially as set forth.

5. A switch-bar provided at its ends with upper and lower laterally-projecting arms one of which has an upright portion, and a 120 cam-bar fitting between said arms and having an upright portion for engagement with the upright portion of one of said arms, substantially as set forth.

6. A cam-bar for switches sloped longitudinally and having an upright wing and a horizontal wing and provided with lugs projecting from its concave side and with a truss brace-rod engaged with said lugs, substan- 130 tially as set forth.

7. The combination of the switch-points the switch-bar, means whereby a switch-bar may operate the switch-points, the cam-bars pivoted at their outer ends and engaged at

their inner ends with the switch-bar, the opposite operating projections on the rolling-stock, the laterally-sliding carrier for said projections, means for shifting such carrier 5 to different positions, and means for locking the said carrier in its different positions substantially as set forth.

8. In an apparatus substantially as described the combination of the operating projections consisting of disks and upright shafts 10 carrying the same, the carrier for said projections having the slide-rods and the bearings at the ends thereof for the shafts of the operating projections and provided between 15 its ends with a connecting portion having a series of openings, a frame in which said carrier is slidably supported, a detent-pin operating in said openings, a lever whereby said

pin may be adjusted to release the carrier, means for operating said lever, a shaft having 20 a crank connected with the carrier and a second crank-arm and means connected with said second crank-arm whereby the shaft may be operated, substantially as set forth.

9. The combination with the carrier and 25 the frame within which said carrier slides between its ends, of the operating projections at the opposite ends of the carrier and outside of the framing therefor, and means for shifting the carrier and for holding it in different 30 positions, substantially as set forth.

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