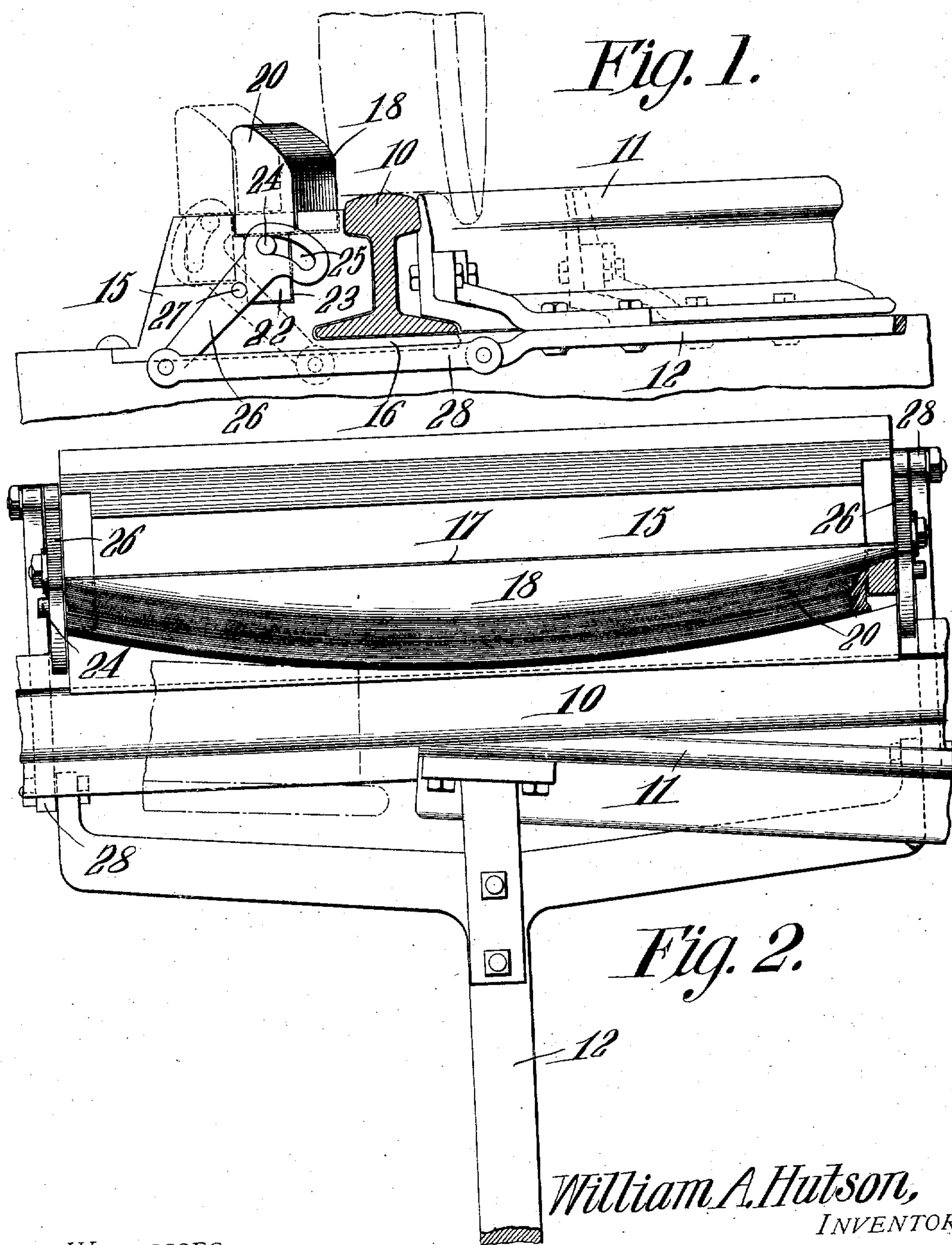


No. 860,871.

PATENTED JULY 23, 1907.

W. A. HUTSON.
SWITCH POINT GUARD.
APPLICATION FILED OCT. 1, 1906.

2 SHEETS—SHEET 1.



WITNESSES:

E. H. Howard
John E. Parker

William A. Hutson,
INVENTOR.

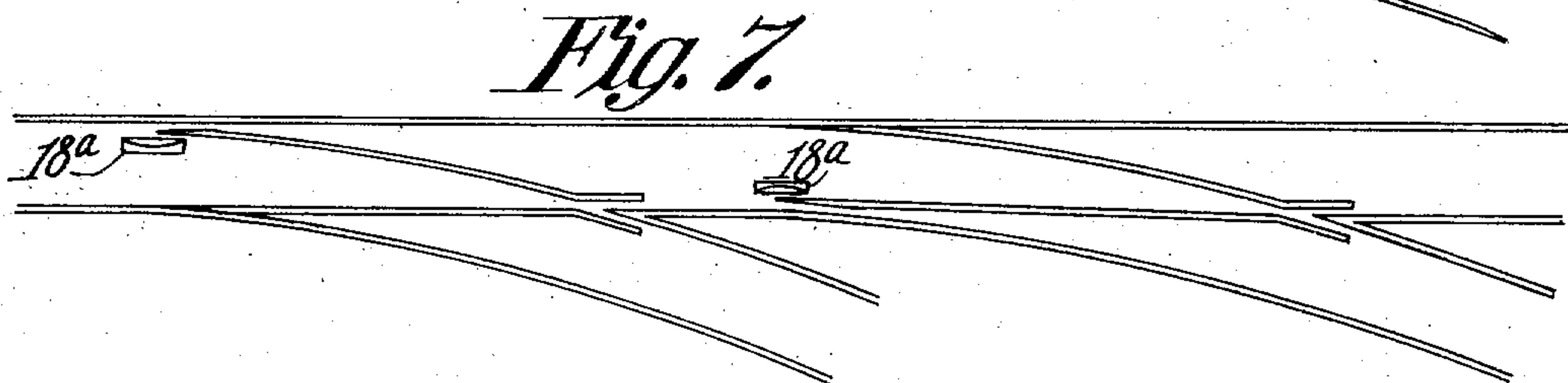
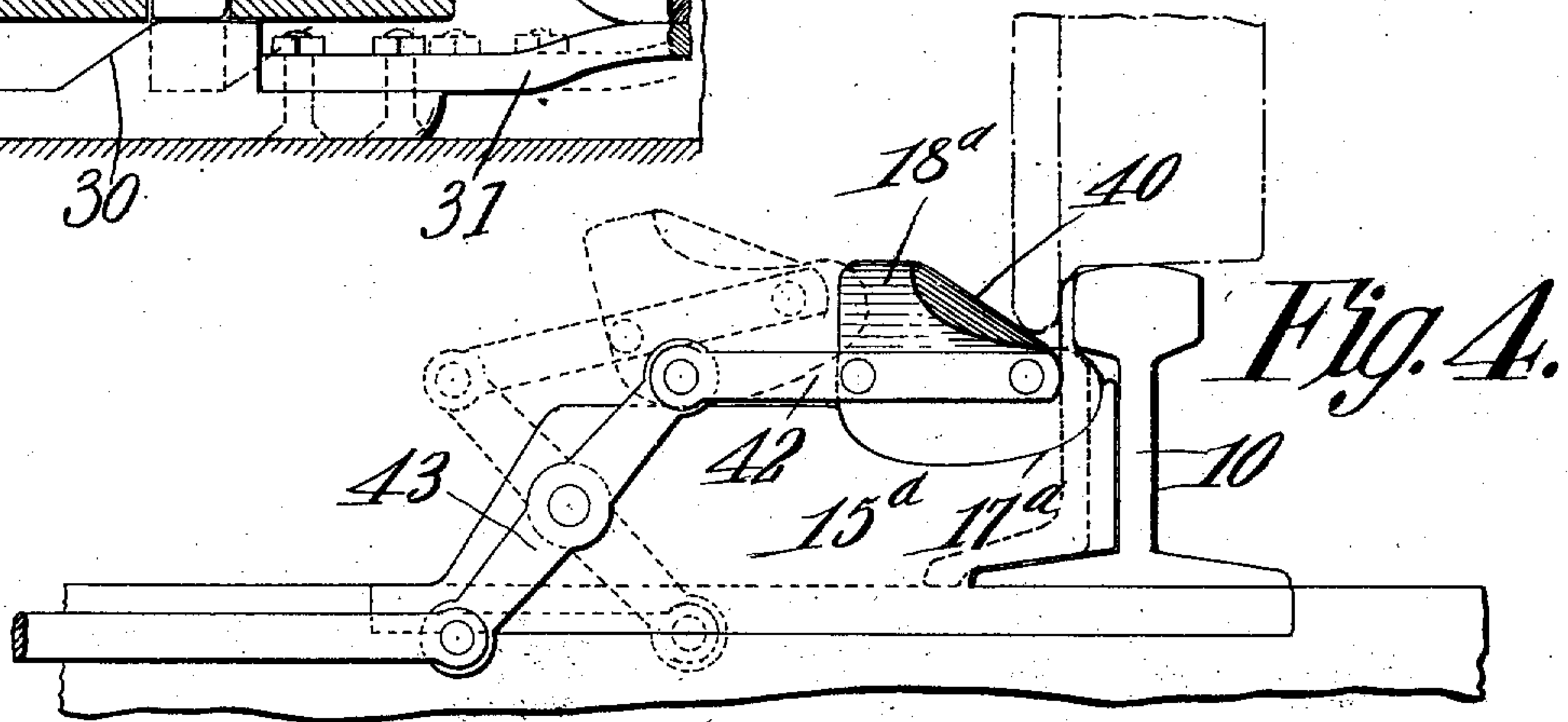
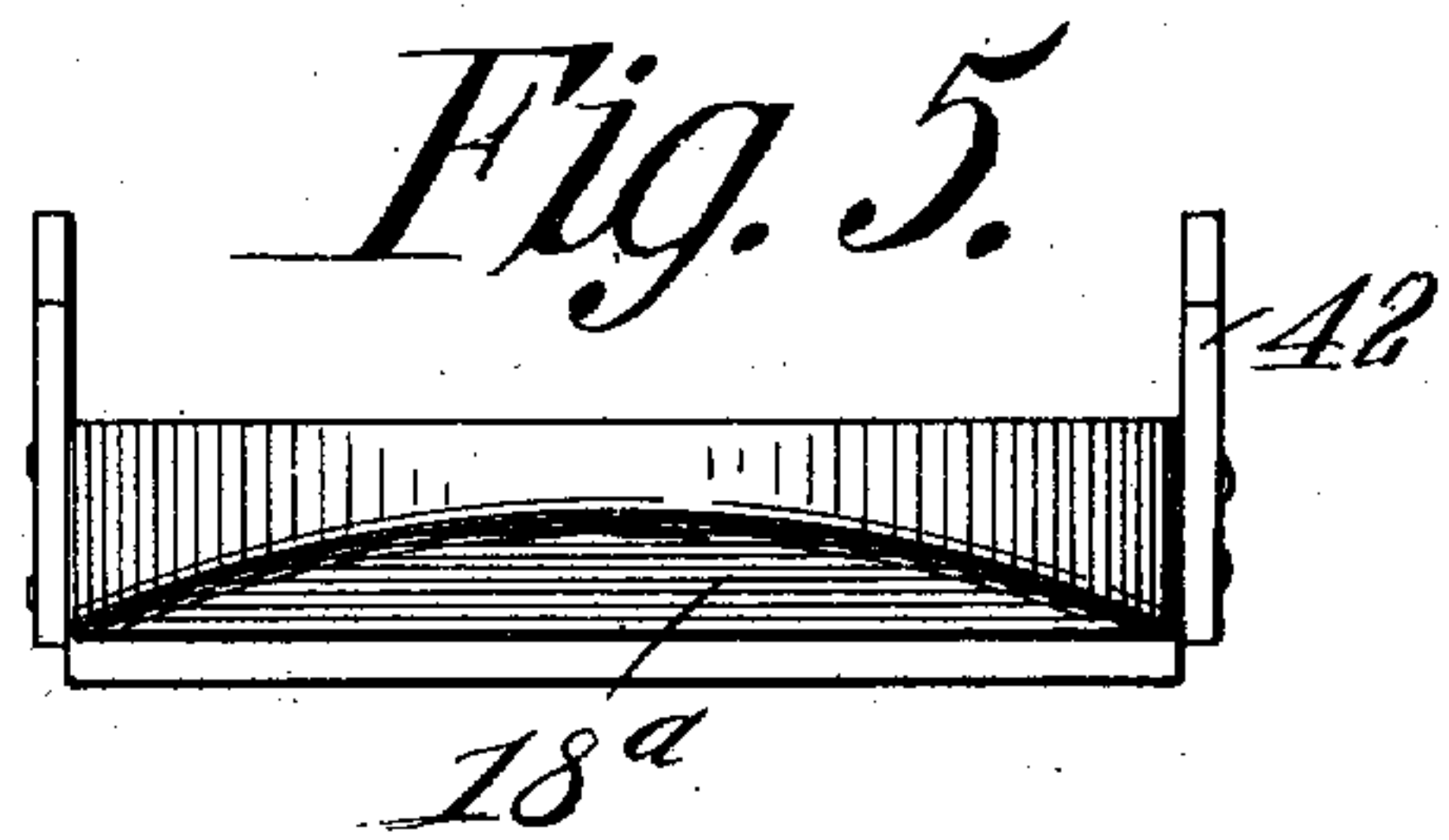
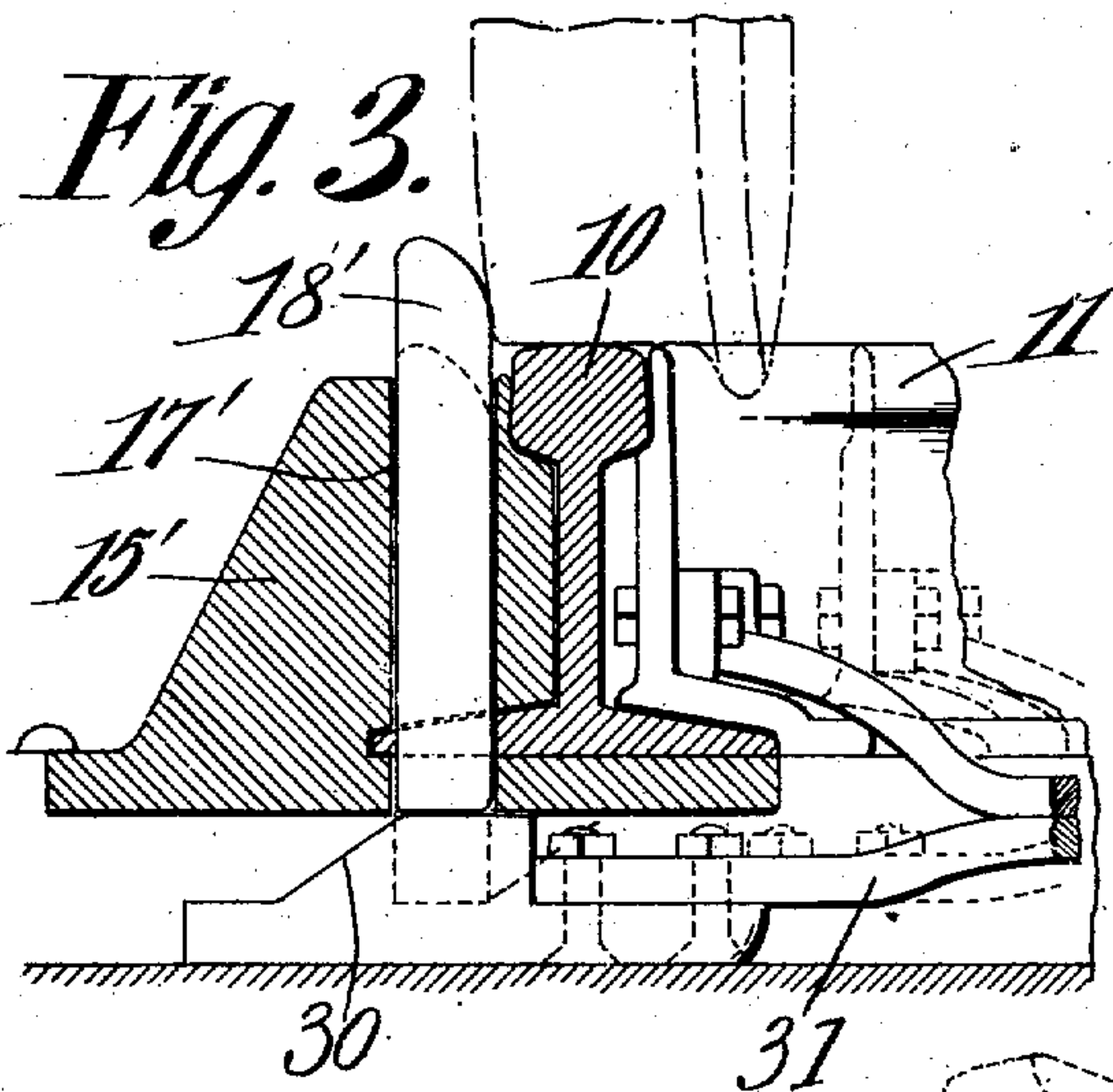
By *C. A. Snow & Co.*
ATTORNEYS

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2 SHEETS—SHEET 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM A. HUTSON, OF ORLANDO, FLORIDA.

SWITCH-POINT GUARD.

No. 860,871.

Specification of Letters Patent.

Patented July 23, 1907.

Application filed October 1, 1906. Serial No. 336,892.

To all whom it may concern:

Be it known that I, WILLIAM A. HUTSON, a citizen of the United States, residing at Orlando, in the county of Orange and State of Florida, have invented a new and useful Switch-Point Guard, of which the following is a specification.

This invention relates to railway switches and particularly to switches of the needle point type, and has for its principal object to provide means for reducing wear on the switch point and preventing mutilation and breakage of the free end thereof.

A further object of the invention is to provide an improved means for engaging the wheels of the train and properly guiding the same in such manner as to positively prevent the passage of the wheel flanges between the switch point and rail.

A still further object of the invention is to provide an apparatus of this kind which is adjusted to position simultaneously with the closing of the switch and which is moved out of the way when the switch is thrown open in order not to interfere with through trains on the main line.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings:—Figure 1 is an end elevation of a switch point guard means constructed in accordance with the invention, the rail being shown in section. Fig. 2 is a plan view of the same. Fig. 3 illustrates a modification of the invention, showing principally the means for transmitting movement to the switch point. Fig. 4 illustrates a still further modification in which the wheel flange is raised before it strikes the point of the switch and then is deflected downward against the switch, immediately forcing the same closely against the rail. Fig. 5 is a detail plan view of the cam block used in the structure shown in Fig. 4. Fig. 6 is a diagram showing the arrangement of the cam block 18 of Figs. 1 and 2. Fig. 7 is a similar view showing the employment of the cam block 18^a.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The main rail 10 and the switch point 11 may be constructed and arranged in the ordinary manner the switch point being connected by a tie bar 12 to the op-

posite switch point and the switch operating mechanism located adjacent to the track or at the switch tower.

At a point near the switch is arranged an elongated block 15 preferably in the form of a heavy casting and provided with a forwardly extending plate 16 which projects under and forms a seat for the foot of the rail, while the inner face of the block is shaped to conform to the vertical web and outer side of the head of the rail. This block is spiked or otherwise secured in place and it may, if necessary, be bolted to the rail proper. In the upper face of the block is an elongated slot 17 that extends from end to end of the block in a direction parallel with the length of the rail, said slot forming a seat for a block 18 having a curved or cam shaped inner face that corresponds in contour to that wall of the slot nearest the rail. The block is curved in the direction of its length, and the upper edge of the curved face is beveled as indicated at 20 so that it may be engaged by the advancing wheel, and when so engaged will deflect the wheel inwardly or toward the center of the road bed so that the flange of the wheel will be thrown some distance from the inner face of the rail head and will clear the point of the switch in case the latter is not pressed firmly against the side of the rail or in case the point is mutilated or broken. The cam block is preferably placed so that the point of the switch is about opposite the center of the length of the block, so that the wheel will be thrown inward to its fullest extent before passing on to the switch point.

When the block is in operative position, it is firmly seated within the slot and cannot be dislodged by any ordinary strain, but in order to more firmly hold the same in place and to permit adjustment to operative and inoperative position, said block is connected to the tie rod 12 or other switch operating member. The opposite ends of the block are provided with downwardly projecting arms 22 which seat within recesses 23 formed in the ends of the block 15, and projecting from these arms are pins 24 which enter cam slots 25 formed in a pair of levers 26 that are pivoted on stationary pins 27. The lower ends of these levers are connected by links 28 to the tie bars 12 of the switch point or other switch operating mechanism, and as the switch point is moved to the open position indicated by dotted lines in Fig. 1, the links 28 will be pulled to the right and the cam slots 25 will act on the pins 24 to elevate the cam block 20 the latter being raised in a vertical line until it is clear of the slot 17 and the arms 22 are clear of the lowermost portions of the recesses 23. The end walls of the cam slots will then come into engagement with the pins and the cam block will be moved away from the rail to the position indicated by dotted lines in Fig. 1, and will be locked in this position so that it will not be engaged by

trains passing on the main line when the switch is open. It will be seen that when moved to the operative position illustrated in Fig. 1, one of the end walls of the slot will engage pin 24 and the cam block will be locked down within the slot 17.

The construction may be modified somewhat as indicated in Fig. 3. In this case the cam block 18' is of practically the same shape as the cam block shown in Figs. 1 and 2 and is arranged to slide vertically in a guiding opening 17' that is formed in the block 15'. The lower end of the cam block rests on a slidable cam 30 that is connected by a bar 31 to the switch point operating member so that when the switch point is moved to the closed position shown in full lines in Fig. 3, the cam will ride under the block 18 and will move the same up to operative position. When the switch is thrown open the cam slide is moved from under the block and the latter moves down to inoperative position out of the path of the wheel treads.

As a further modification of the invention provision is made for controlling the positions of the wheels by engaging the flanges thereof. For this purpose a chair or block 15^a is placed inside the rail and preferably is constructed to form a chair therefor as shown in Fig. 4. This block is provided with a recess 17^a that is slightly rounded in cross section and is arranged to engage a bodily movable cam block 18^a. This block 18^a when in operative position presents an inclined surface 40 up which the flange of the wheel must run, and at the top of this inclined surface the block is beveled transversely so that the wheel flange will slide downward and outward and pass against the switch point, the latter being so located that its extreme end portion will be in advance of the bevel face of the block, so that the flange of the wheel will pass the extreme point of the switch while moving up the inclined surface 40.

The cam block 18^a may be moved out bodily to the dotted line position by suitable connections with the switch operating mechanism, and for this purpose the opposite ends of the block are shown as provided with inwardly extending arms 42 which are connected by a lever 43 to the switch point operating devices, so that when the latter are moved the cam block will, also, be adjusted, and, owing to the transverse curvature of the recess 17^a, the cam block may slide freely to and from its operative position.

With a device constructed in accordance with this invention, the flange of the wheel or wheels will always be held some distance from the inner face of the switch point until it has actually passed beyond the extreme

end of the switch point, so that the flange cannot enter between the switch point and the rail.

I claim:—

1. In a railway switch, a switch point having deflecting means connected to and movable with the switch point and arranged in the path of travel of the wheels for preventing contact between the wheel flanges and the extreme end of the switch point. 55

2. In a railway switch, a switch point having deflecting means connected to and movable with the switch point and arranged in the path of travel of the wheels for engaging and deflecting the wheels as they pass the extreme ends of the switch point. 60

3. In a railway switch, a switch point, a wheel deflector at the switch point, and means for connecting the deflector to the switch operating mechanism, and serving when engaged by a wheel to force the switch point closely against the rail. 65

4. In a railway switch, a switch point, a cam block arranged in the path of travel of the wheels and serving to deflect said wheels to prevent contact between the flanges and the extreme end of the switch point, and means for connecting the cam block to the switch point. 70

5. In a railway switch, a switch point, a cam block arranged to engage the outer side of the wheel tread, and force the wheel flange inward during its passage over the extreme end of the switch point, and means for connecting the cam block to the switch point to force the latter against the side of the rail. 75

6. In a railway switch, a switch point, a cam block arranged to be engaged by the outer faces of the wheel treads, and means for connecting said block to the switch operating means for forcing the switch point against the side of the rail during the passage of the wheel. 80

7. In a railway switch, a switch point, a switch operating means, a wheel deflecting cam block, and means for connecting the cam block to the switch operating means for forcing the switch point against the side of the rail during the passage of the wheel. 85

8. In a railway switch, a switch point, a recessed block arranged adjacent thereto, a wheel deflecting cam block seated within the recess, a switch operating means, and means for connecting said block to the switch operating means. 90

9. In a railway switch, a switch block, a recessed block arranged adjacent thereto, a cam block having a curved and beveled face adjacent to the rails, means projecting from the opposite ends of said cam block, a pair of levers having cam slots for the reception of said pins, a switch operating means, and mechanism for connecting said levers to said switch operating means. 95

10. In a railway switch, a wheel deflector arranged directly at the switch point and movable to operative and inoperative positions with the switch point. 100

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses. 105

WILLIAM A. HUTSON.

Witnesses:

E. HUME TALBERT,
JNO. E. PARKER.