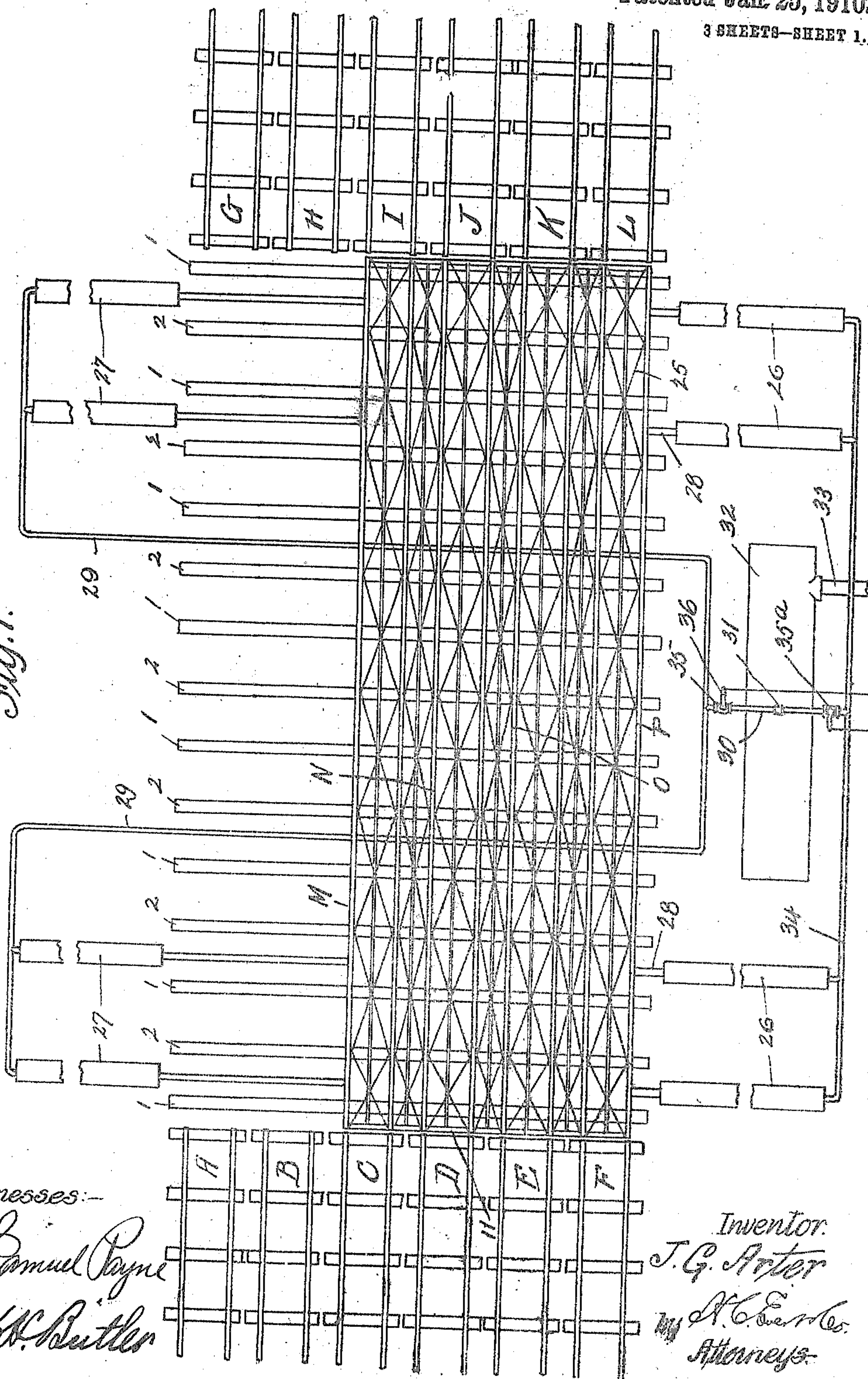


SWITCH.

947,607.

3 SHEETS—SHEET 1.



Witnesses:-

Samuel Payne  
Rev. Butler

Inventor.

J. G. Peter

*W. H. E. Co.*  
*Attorneys.*

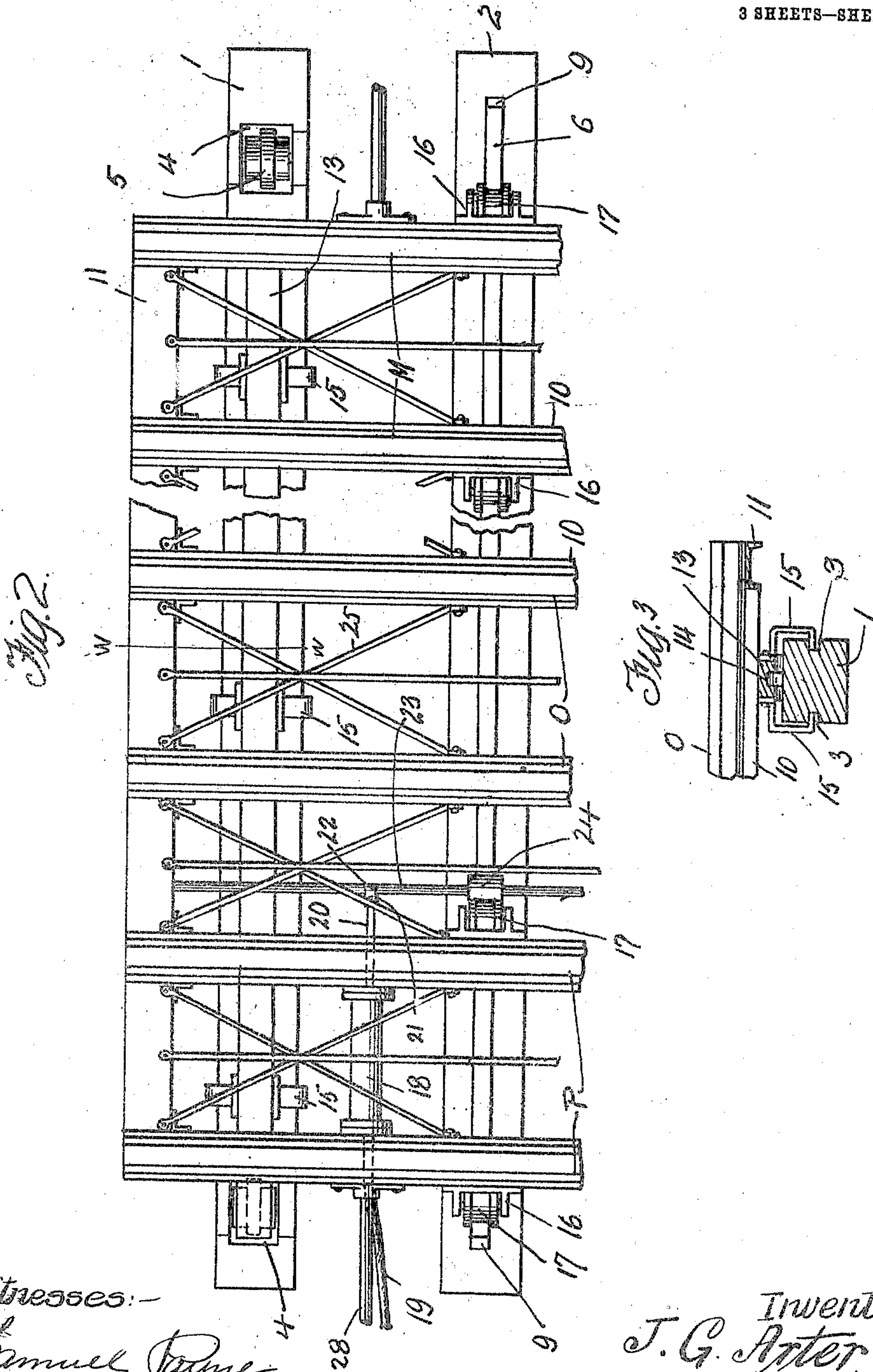
J. G. ARTER.  
SWITCH.

APPLICATION FILED OCT. 7, 1909.

947,607.

Patented Jan. 25, 1910.

3 SHEETS—SHEET 2.



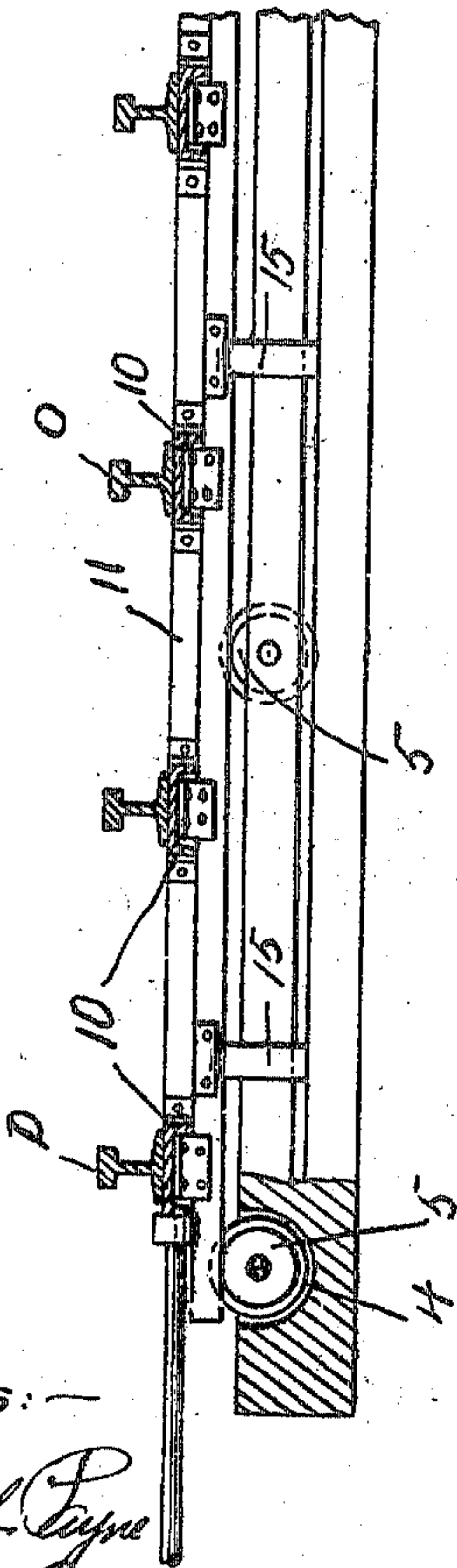
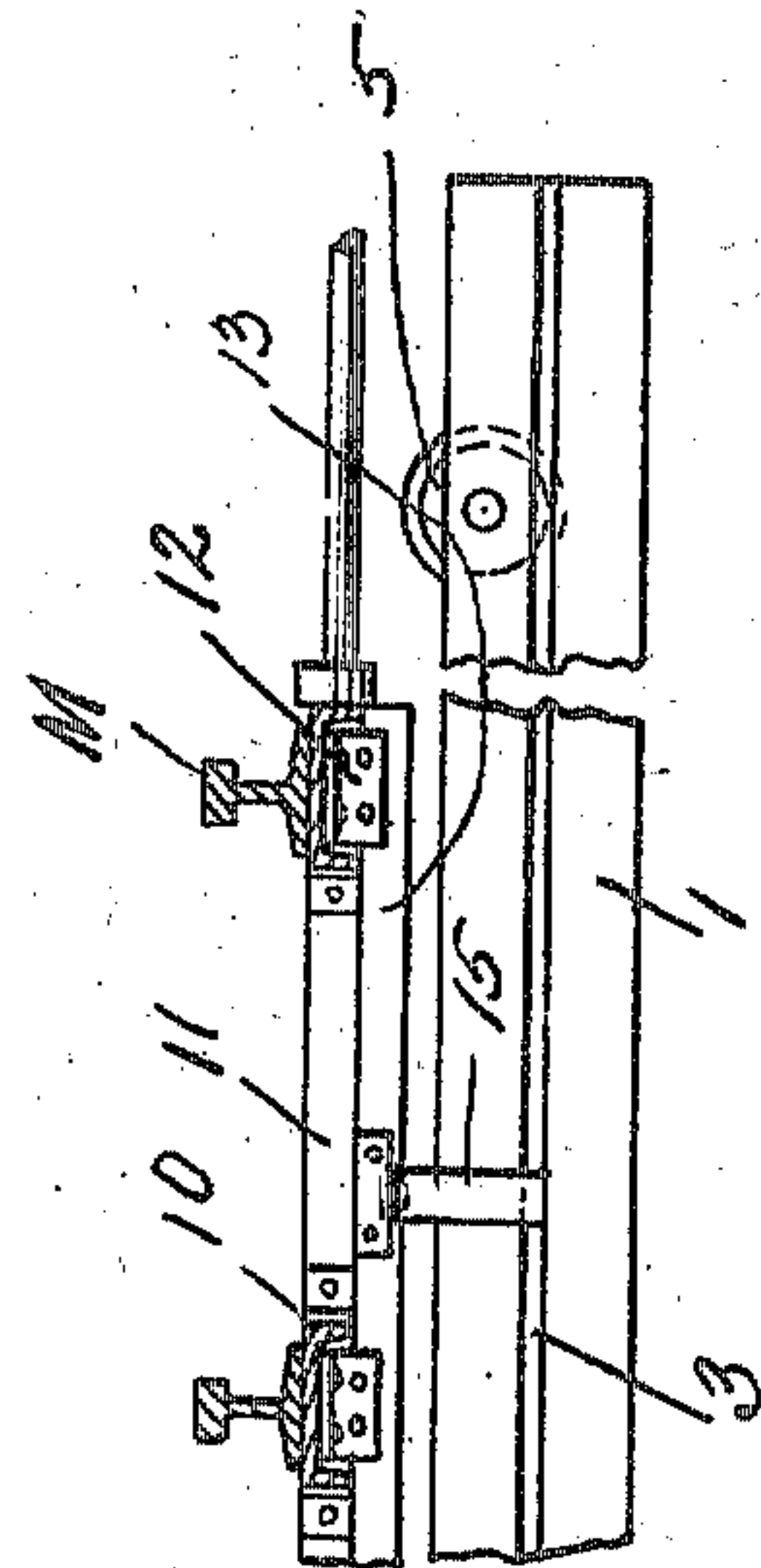
Witnesses:  
Samuel Payne  
A. H. Butler

Inventor  
J. G. Arter,  
by J. C. Evers & Co.  
Attorneys



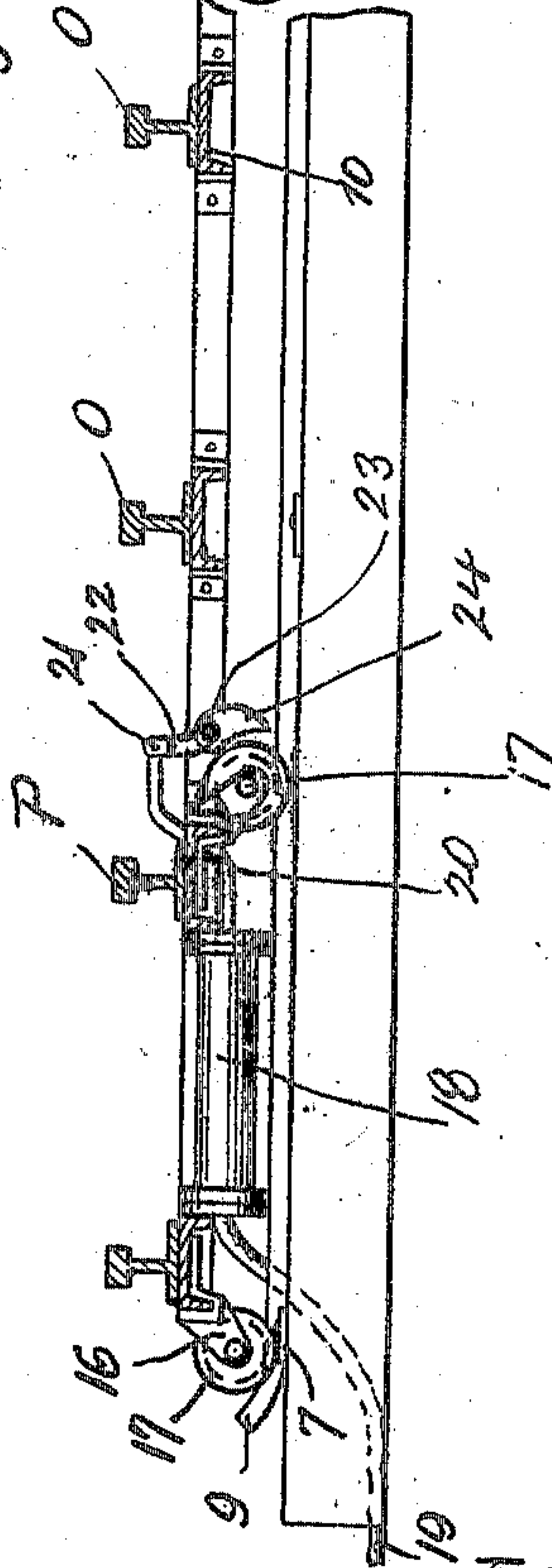
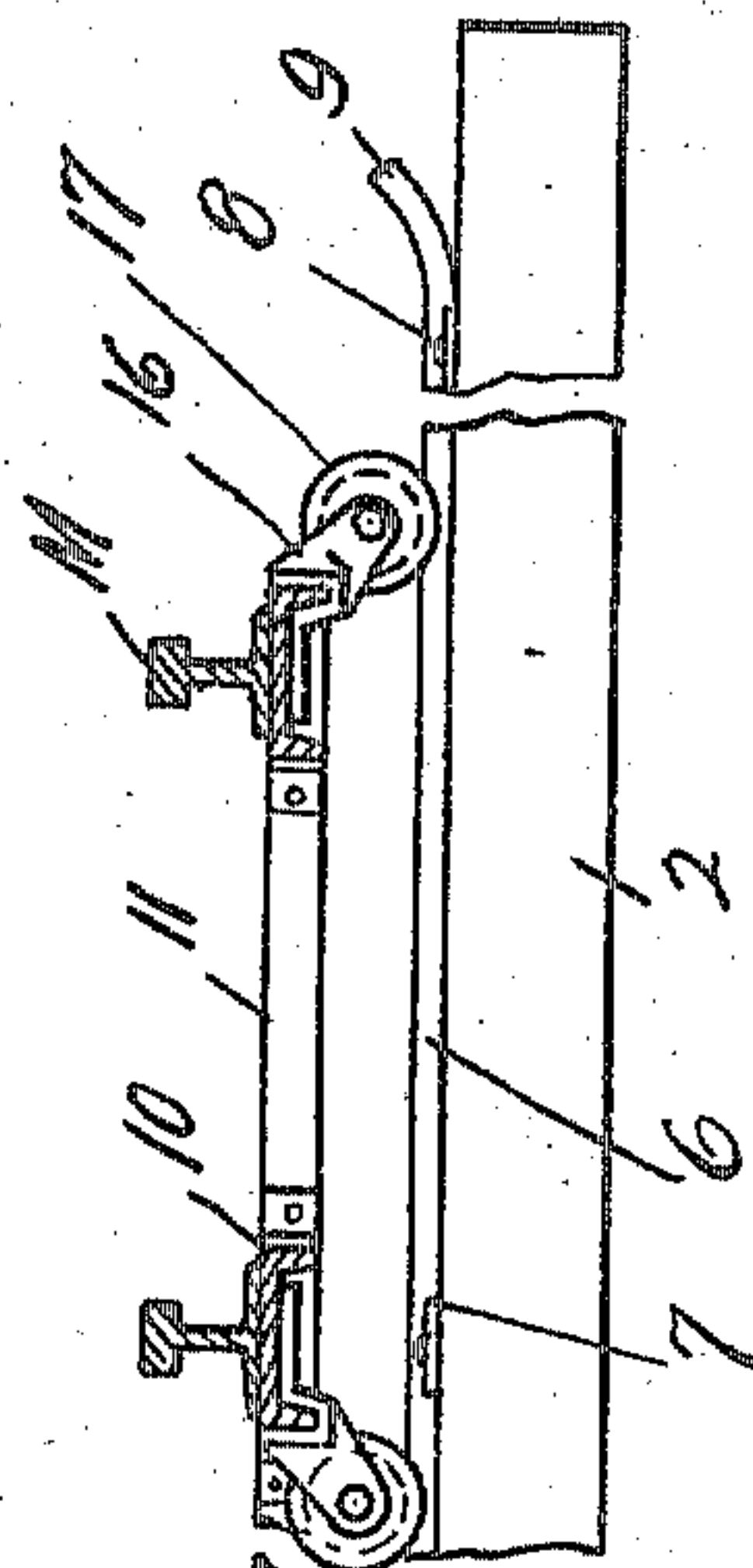
APPLICATION FILED OCT. 7, 1909.

Patented Jan. 25, 1910.  
3 SHEETS—SHEET 3.



Witnesses: —

Samuel Payne  
A. S. Butler



10

Inventor  
J. G. Arter.  
H. C. Everett Co.  
by Attorneys.



# UNITED STATES PATENT OFFICE.

JAMES GARFIELD ARTER, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR OF TWO-FIFTHS  
TO EDWIN E. HERTZLER, OF PITTSBURG, PENNSYLVANIA.

## SWITCH.

947,607.

Specification of Letters Patent.

Patented Jan. 25, 1910.

Application filed October 7, 1909. Serial No. 521,552.

*To all whom it may concern:*

Be it known that I, JAMES GARFIELD ARTER, a citizen of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Switches, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to switches, and more particularly to a car or train transferring apparatus designed for large railroad yards.

The primary object of my invention is to provide a plurality of movable track sections adapted to be shifted to establish a connection between the confronting ends of a plurality of tracks.

Another object of this invention is the provision of positive and reliable means for shifting a plurality of tracks upon which cars or trains are placed.

A further object of this invention is to obviate the necessity of using switch tongues and frogs for shifting a car or train from one track to another.

A still further object of this invention is to provide a switch that will permit of a plurality of trains being shifted from one track to another.

With these and such other objects in view as may hereinafter appear, the invention consists in the novel construction, combination and arrangement of parts to be hereinafter described in detail and then claimed.

Reference will now be had to the drawings forming a part of this specification, wherein there is illustrated a preferred embodiment of the invention; but I reserve the right to vary and change the structural elements thereof without departing from the scope of the appended claims.

In the drawings:—Figure 1 is a diagrammatic plan of my switch, Fig. 2 is an enlarged plan of a portion of the same, Fig. 3 is a cross sectional view taken on the line W—W of Fig. 2, Fig. 4 is a cross sectional view of a portion of the switch, illustrating the guides forming part thereof, and Fig. 5 is a similar view illustrating the supporting pipes of the switch.

Reference will first be had to Fig. 1 of the drawings, wherein I have diagrammatically illustrated a switch in order that the manner

of operating and transferring cars or trains can be fully understood.

The reference characters A, B, C, D, E and F designate sections of tracks adapted to be connected by my improved switch to sections of tracks G, H, I, J, K and L, the sections of tracks A to F inclusive being in alignment with the sections of tracks G to L inclusive. Between the confronting ends of these tracks are alternately arranged ties 1 and 2, each tie being of a sufficient length to extend from the outer rail of track A to the outer rail of track F. The ties 1 have the longitudinal sides thereof provided with grooves 3 extending from end to end of the tie, and the upper faces of the ties are provided with a plurality of equally spaced recesses 4. In said recesses are revolubly mounted wheels 5.

Upon the ties 2 are secured longitudinal rails 6, said rails having the sides thereof provided with lugs 7 adapted to be spiked or otherwise secured to the ties 2, as at 8. The ends of the rails 6 extend in proximity to the ends of the ties 2, and are bent upwardly, as at 9 to prevent accidental displacement of the switching or transferring truck, which will now be described.

The switching or transferring truck comprises a plurality of longitudinal inverted channel bars 10 to which are suitably secured rails, comprising tracks M, N, O and P. The longitudinal channel bars 10 are connected by transverse channel bars 11, and some of these bars are connected by angle brackets 12 to transverse supporting members 13, said members having the under sides thereof grooved, as at 14 from one end thereof to the opposite end, to receive the revoluble wheels 5. The supporting members 13 are provided with depending C-shaped arms 15 adapted to extend into the grooves 3 of the ties 1 and prevent accidental displacement of the truck. Some of the longitudinal channel bars 10, preferably those supporting the track sections M and P, are provided with depending hangers 16 supporting revoluble grooved wheels 17 adapted to travel upon the rails 6 of the ties 2.

The channel bars 10 associated with the rail sections P support a hydraulic cylinder 18 having a flexible connection 19 with a suitable source of compressed air. The pis-



ton rod 20 of the cylinder 18 is curved and pivotally connected, as at 21 to the crank 22 of a longitudinal shaft 23, journaled in the transverse channel bars arranged at the end of the truck, said shaft being located between the track sections O and P. Mounted upon the shaft 23 are brake shoes 24 adapted to engage the wheels 17 located in proximity to the inner rail of the track section P.

As shown in Fig. 1, the rails of the various track sections can be tied together and braced by diagonally and longitudinally disposed tie rods 25. Located at the ends of the ties 1 and 2 are hydraulic cylinders 26 and 27, these cylinders having the piston rods 28 thereof connected to the outermost rails of the track sections M and P. The cylinders 27 are connected by branch pipes 29 to a main pipe 30, said branch pipes extending between the ties 1 and 2 beneath the switching or transferring track, while the main pipe 30 is connected, as at 31 to an air reservoir 32, which is connected by a pipe 33 to a suitable source of compressed air. The cylinders 26 are connected by branch pipes 34 to the main pipe 30, and located upon said main pipe at each side of the connection 31 are three-way valves 35 and 35<sup>a</sup>. These valves are of the ordinary and well known type and have been conventionally illustrated in Fig. 1 of the drawings with controlling levers 36 adapted to be shifted to place the valve in a closed, open or exhaust position.

As shown in Fig. 1 of the drawings, the switching or transferring truck connects the tracks C to F inclusive with the tracks A to L inclusive, and to shift the truck to connect the tracks A to D inclusive and G to J inclusive, the valve 35 is operated to allow the cylinders 27 to exhaust and then the valve 35<sup>a</sup> is operated to admit air from the reservoir 32 to the cylinders 26. The air entering the cylinders 26 shifts the truck and longitudinally alines the rail sections M to P inclusive with the rails A, B, C, D and G, H, I and J.

The operation of the hydraulic cylinder 18 can be controlled from a suitable point to stop the truck at any point during the movement of the same, it being preferable to use the brake shoes to lock the truck while cars are passing on and off the same.

Having now described my invention what I claim as new is:—

1. The combination with two series of spaced track sections, the tracks of each series being parallel, a series of cross ties arranged in the space between the two series of track sections, alternate ties of said series provided with grooved sides, a plurality of tracks mounted on said cross ties and shiftable thereon to aline the same with different track sections of both of said series of track

sections, each track embodying two rails fixedly connected in pairs and all of the tracks connected to move in unison longitudinally of the cross ties, means carried by said shiftable tracks engaging in the grooved cross ties, rollers carried by alternate cross ties on which the tracks ride when being shifted, track rails carried by alternating cross ties, and rollers carried by the tracks engaging said track rails, and means for shifting said tracks in unison in opposite directions laterally of the track sections.

2. The combination with two series of spaced track sections, the tracks of each series being parallel, a series of cross ties arranged in the space between the two series of track sections, a plurality of tracks mounted on said cross ties and shiftable thereon to aline the same with different tracks of both of said series of track sections, each track embodying track rails fixedly connected in pairs and all of the tracks connected to move in unison longitudinally of the cross ties, rollers carried by alternate cross ties on which the tracks ride when being shifted, track rails extending longitudinally on some of the cross ties, rollers carried by the tracks engaging said longitudinal track rails, and means for shifting said tracks in unison in opposite directions laterally of the track sections.

3. The combination with two series of spaced track sections, the tracks of each series being parallel, a series of cross ties arranged in the space between the two series of track sections, a plurality of tracks mounted on said cross ties and shiftable thereon to aline the same with different track sections of both of said series of track sections, each track embodying track rails fixedly connected in pairs and all of the tracks connected to move in unison longitudinally of the cross ties and laterally of the series of track sections, rollers carried by some of said cross ties on which the tracks ride while being shifted, rails carried by some of said cross ties, and rollers carried by the tracks engaging said rails, means for shifting said tracks in unison in opposite directions laterally of the track sections, brakes for the rollers traveling on said rails, and means for operating said brakes.

4. The combination with two series of spaced track sections, the tracks of each series being parallel, a series of cross ties arranged in the space between the two series of track sections, a plurality of tracks mounted on said cross ties and shiftable thereon to aline the same with different tracks of both of said series of track sections, each track embodying track rails fixedly connected in pairs and all of the tracks connected to move in unison longitudinally of the cross ties, rollers carried by some of said cross ties on which the laterally movable tracks ride



when being shifted, rails carried by some of said cross ties, rollers carried by the tracks and engaging said rails, and pneumatic means for shifting said tracks in unison in opposite directions laterally of the track sections.

5. The combination with two series of spaced track sections, the tracks of each series being parallel, a series of cross ties arranged in the space between the two series of track sections, a plurality of tracks mounted on said cross ties and shiftable thereon to aline the same with different tracks of both of said series of track sections, each track embodying track rails fixedly connected in pairs and all of the tracks connected to move

in unison longitudinally of the cross ties, rollers carried by some of said cross ties on which the laterally movable tracks ride when being shifted, rails carried by some of said cross ties, rollers carried by the tracks and engaging said rails, brakes carried by said tracks to engage the rollers traveling on said rails, and pneumatic means for shifting the tracks in unison laterally of the track sections and applying said brakes.

In testimony whereof I affix my signature in the presence of two witnesses.

JAMES GARFIELD ARTER.

Witnesses:

CHAS. A. ALLEN,  
MAX H. SROLOVITZ.