

(No Model.)

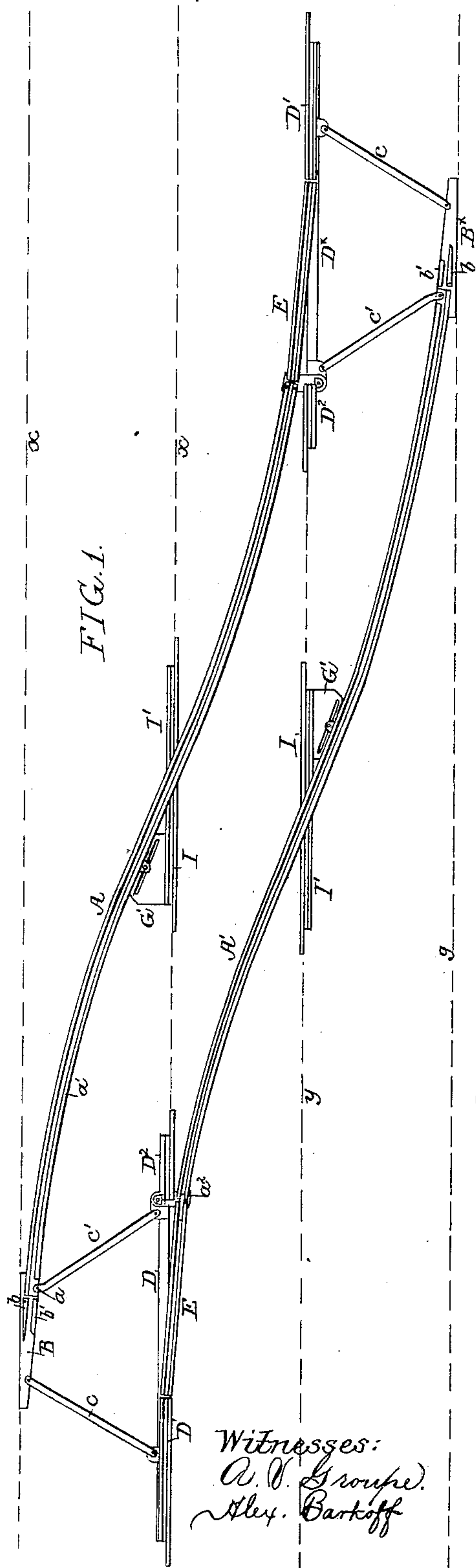
3 Sheets—Sheet 1.

V. ANGERER & C. A. PSILANDER.

PORTABLE CROSS-OVER FOR RAILROADS.

No. 432,292.

Patented July 15, 1890.



Witnesses:
A. V. Groupe.
Alex. Barkoff

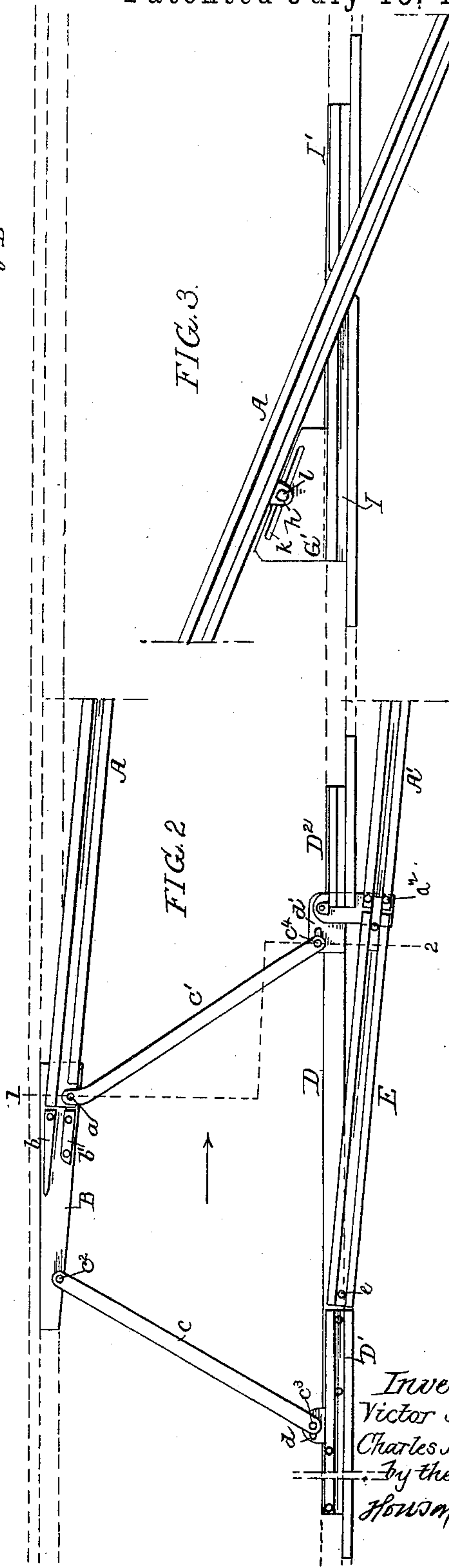


FIG. 3.

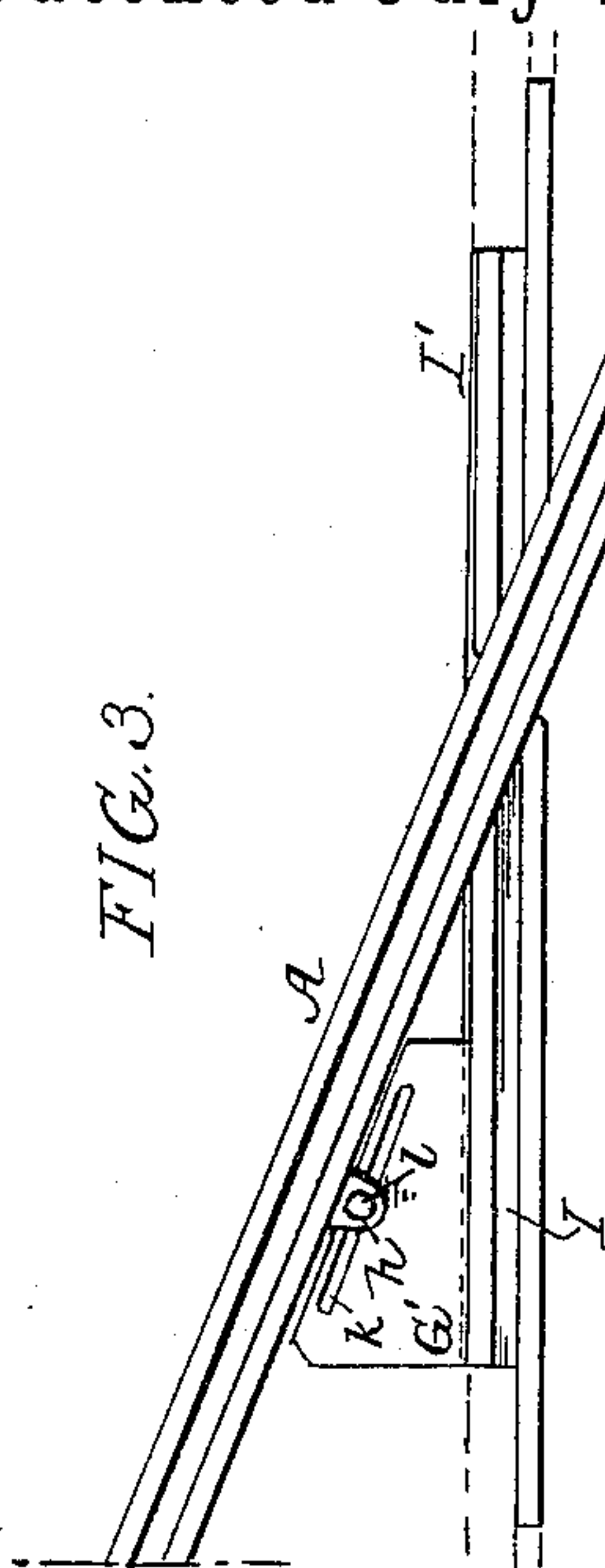
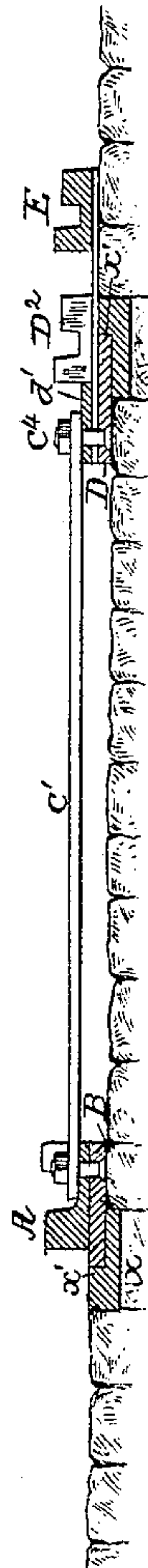


FIG. 4.



Inventors
Victor Angerer &
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(No Model.)

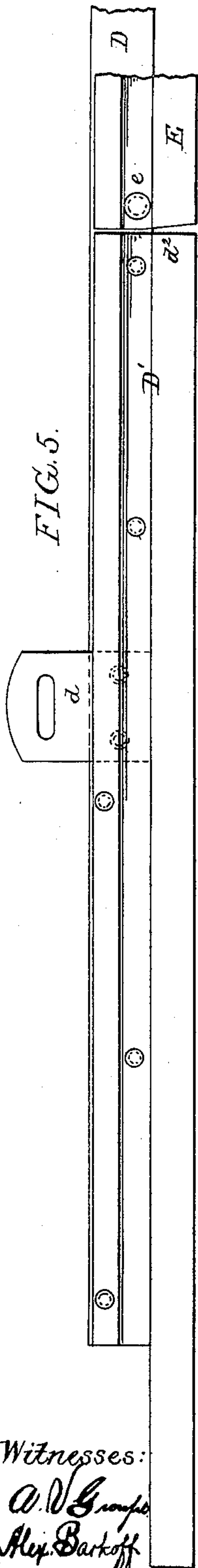
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V. ANGERER & C. A. PSILANDER.

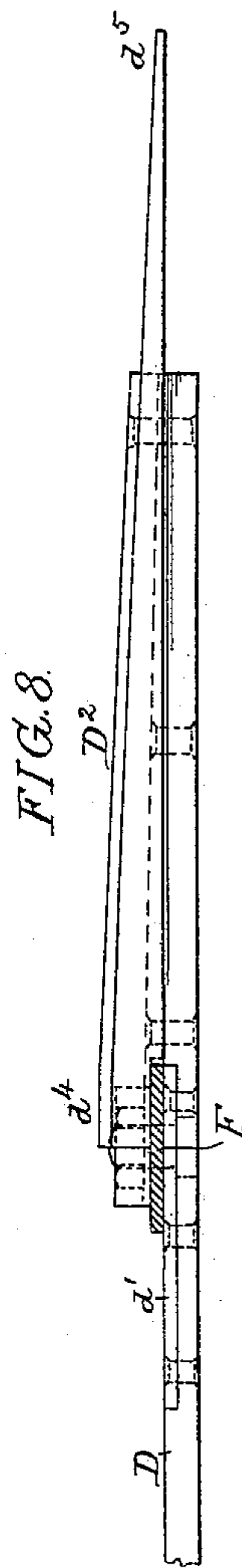
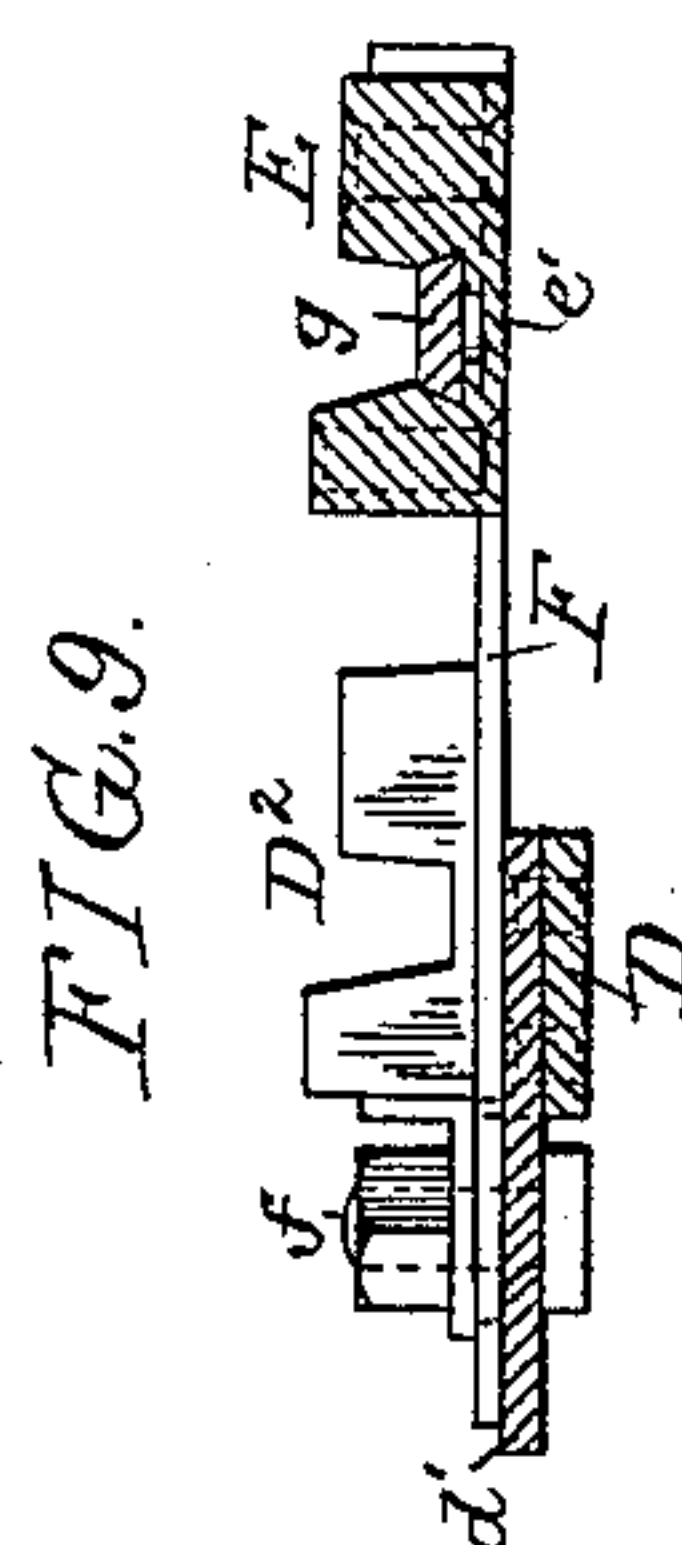
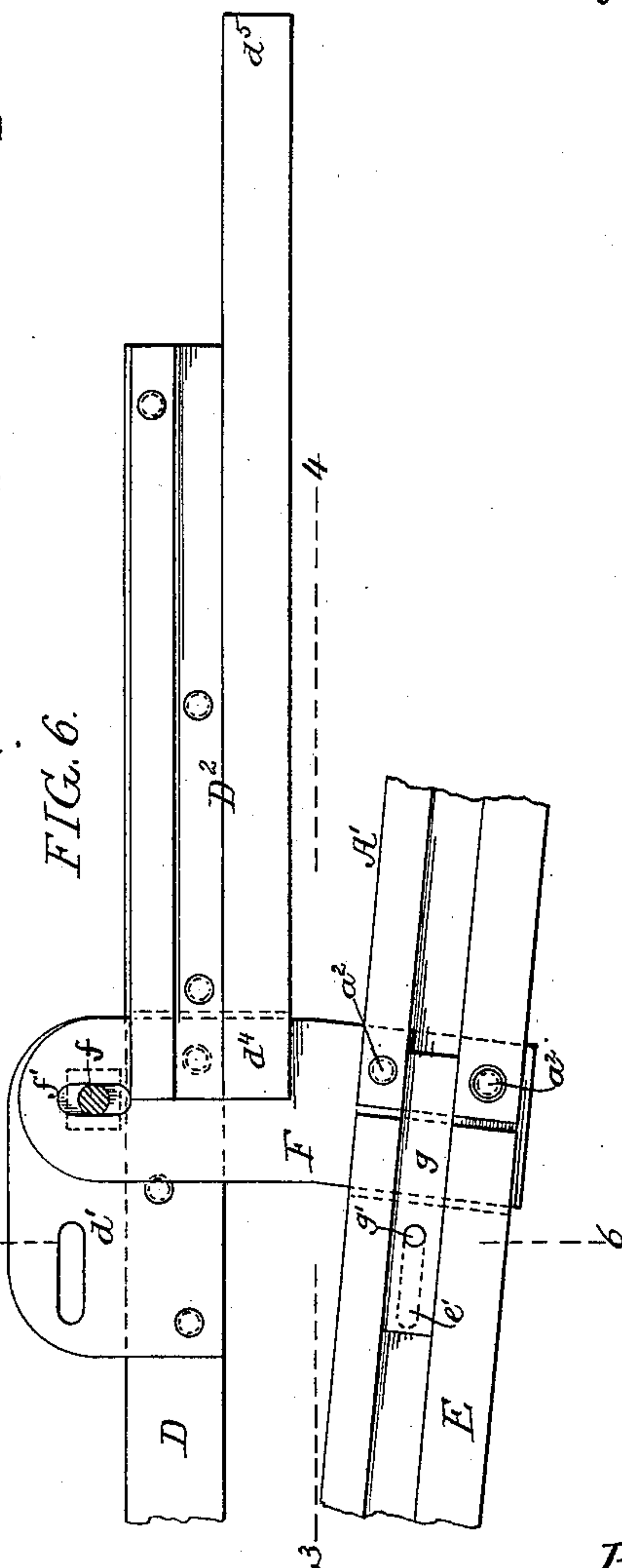
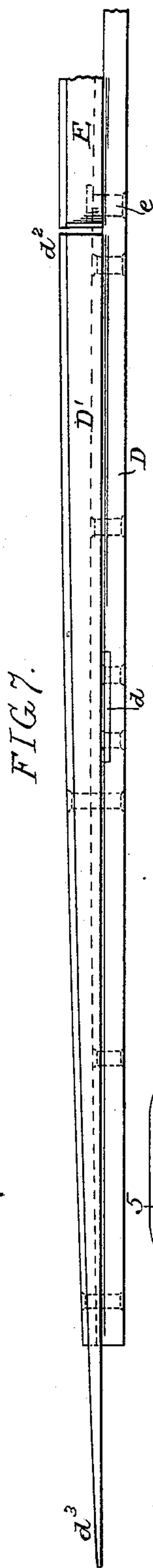
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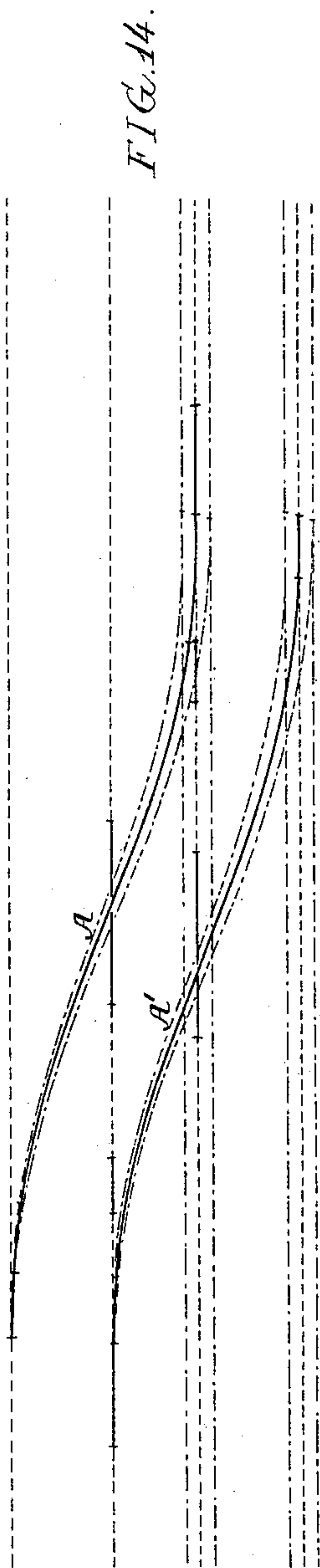


FIG. 11.



FIG. 10.

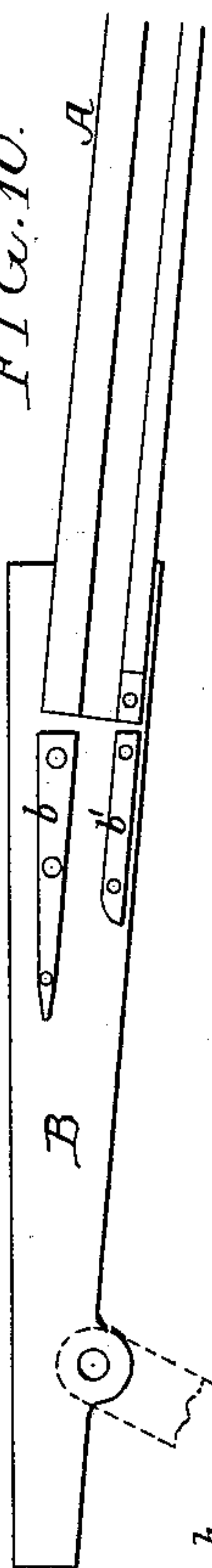


FIG. 12.

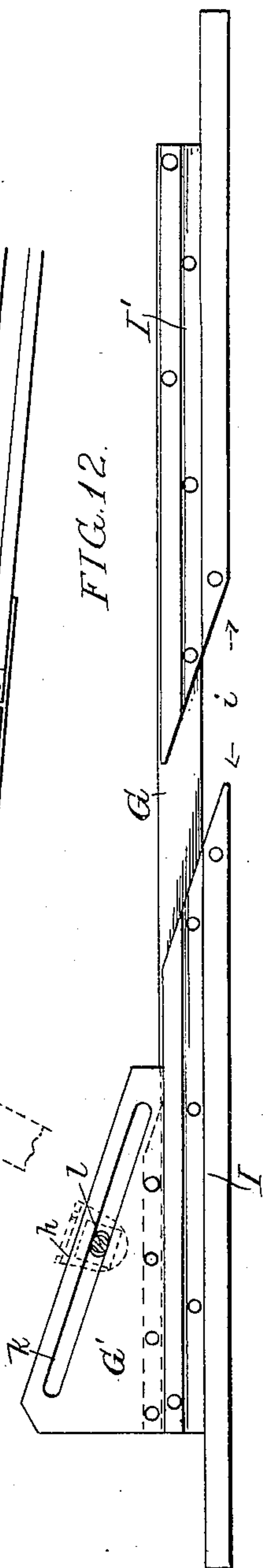
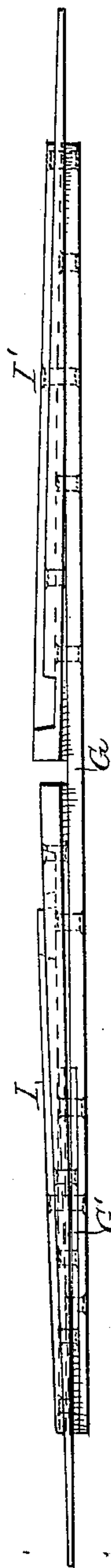


FIG. 13.



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UNITED STATES PATENT OFFICE.

VICTOR ANGERER AND CHARLES A. PSILANDER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNORS TO WILLIAM WHARTON, JR., AND COMPANY, (INCORPORATED,) OF SAME PLACE.

PORTABLE CROSS-OVER FOR RAILROADS.

SPECIFICATION forming part of Letters Patent No. 432,292, dated July 15, 1890.

Application filed October 15, 1889. Serial No. 327,099. (No model.)

To all whom it may concern:

Be it known that we, VICTOR ANGERER, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, and CHARLES A. PSILANDER, a subject of the King of Sweden and Norway, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Portable Cross-Overs for Railroads, of which the following is a specification.

One object of our invention is to so construct a temporary cross-over for street-railway tracks that the crossing-rails will not be raised to an objectionable extent above the surface of the street, and will be supported by the street-pavement between the tracks and between the rails of the tracks, another object being to provide for readily adapting the cross-over to tracks at different distances apart, a further object being to accurately adjust the gage of the cross-over track, and a still further object being to so construct the parts of the cross-over that they can be readily applied to and removed from the permanent tracks and can be readily put together and taken apart, and hence can be packed in small space, or can be readily transported from place to place.

In the accompanying drawings, Figure 1 is a plan view of our improved cross-over. Figs. 2 and 3 are enlarged plan views of details of Fig. 1. Fig. 4 is an enlarged section on the line 1 2, Fig. 2, looking in the direction of the arrow. Figs. 5 and 6 are plan views of parts of the inner switch-section of the cross-over. Fig. 7 is a side view of that part of the inner switch-section shown in Fig. 5. Fig. 8 is a section on the line 3 4, Fig. 6. Fig. 9 is a section on the line 5 6, Fig. 6. Fig. 10 is a plan view of the outer switch-section of the cross-over. Fig. 11 is a side view of the same. Figs. 12 and 13 are respectively a plan view and a side view of the frog-section of the structure, and Fig. 14 is a diagram illustrating the different adjustments of the cross-over track.

We will state in the first instance that the device is so constructed as to be applied directly to and to be mounted on the rails of the main or parallel tracks, and rests directly

upon the roadway between the tracks and between the rails of the tracks, whether such roadway be stone, concrete, or earth.

Referring to Fig. 1, A A represent the crossing-rails, made in a continuous piece or in sections, as desired. The rail A is pivoted at one end at *a* to the outer switch-plate B, which is provided with a raised point *b* and a raised guard *b'*. The rails A A' are preferably grooved rails having a guard-flange *a'* on the inner side. The opposite end of the rail A is secured to the inner switch-plate D^x at the other end of the cross-over by bolts or rivets *a*², Fig. 6. The rail A' is secured to the inner switch-section D by bolts or rivets *a*², Fig. 6, and at the opposite end it is pivoted to the outer switch-plate B^x, of the same construction as the plate B.

The outer switch-plate B and the inner switch-plate D are connected together by tie-bars *c c'*, the tie-bar *c* being pivoted at *c*² to the plate B and secured to a slotted lug *d* on the inner switch-plate D by a bolt *c*³. The slot in this lug is clearly shown in Fig. 5, and the object of having the lug slotted is to provide the cross-over with means of adjustment, first, to allow for slight variations in the gage of the main tracks, and, secondly, to allow a slight variation in the relative longitudinal positions of the plates B and D necessary to adjust the rails A and A' to gage as the distance between the main tracks varies. The rod *c'* is pivoted at *a* to the outer switch-plate B and is hung by a bolt *c*⁴ to a slotted lug or plate *d'*, Figs. 2 and 6, on the inner switch-plate D, so as to permit adjustments for the purposes above set forth.

It will be seen by referring to Fig. 4 that the outer switch-plate B and the inner switch-plate D rest upon and are supported directly by the tram or wagon tread of the rails *x x* of the track, so that when the tie-rods *c c'* are adjusted the plates are pressed outward against the shoulders *x'* of the rails *x* and a snug fit is assured.

Figs. 10 and 11 clearly show the construction of the outer switch-section, and Figs. 5, 6, 7, 8, and 9 clearly show the construction of the inner switch-section.

Mounted on the plate D is a grooved-rail section D', tapered, as shown, from the point d^2 to the point d^3 , Fig. 7, this rail-section resting directly above the tread of the main rail x , and the wheels of the car pass from said main rail x up the incline onto the rail D'.

E is a grooved-rail section pivoted at e to the plate D and resting on a projecting plate F, adjustably secured to the plate D and its lug d' by a bolt f , which passes through a lateral slot f' in the plate F, as shown in Fig. 6. The rail A' is also secured to this plate by bolts or rivets a^2 , referred to above.

In the groove of the rail E is an undercut recess for the reception of a sliding latch g , a pin g' on which enters a slot e' in the rail E, which thus limits the movement of the latch and prevents the escape of the same from the undercut recess formed in the rail for its guidance. By moving the latch outward the rail E can be locked to the rail A', or by moving the rail E on its pivot when the latch is withdrawn it can be moved into line with the rail-section D² and locked thereto by the latch g . The section D² tapers from the point d^4 to the point d^5 , Fig. 8, to allow the wheels of the car to be transferred from the switch-rail E to the main rail x without jar. The movable switch-rail E thus permits the wheel of the car to pass onto or from the rail of the cross-over, or by turning it into line with the rail D² it permits the passage of the wheel of the car along the main track, so that cars can be shifted from one track to another without interfering with cars running in the proper direction along either track.

The outer switch-section B^x and the inner switch-section D^x are similar in construction to the sections B and D, and therefore need not be described in detail. They are adjusted to the tracks $y y$ in substantially the same manner as the sections B and D are adjusted to the tracks $x x$.

Where each crossing-rail passes over one of the main rails, there is a frog-plate G, which rests upon the wagon tread or tram of the main rail, and secured to this plate are rail-sections I I', with a gap between them for the reception of the crossing-rail, each of these rail-sections comprising an outer wheel-tread and inner guard-flange, and the wheel-tread being tapered, so as to raise the wheel to a point which will permit it to pass over the crossing-rail and to again direct it to the main rail after it has passed over said crossing-rail. The gap between the rail-sections I I' is such as to provide sufficient play for the crossing-rail to permit it to assume the different angles necessitated by the difference in the distance apart of the tracks to which the cross-over is applied, for the greater the distance between the tracks the more obtuse will be the angle of the crossing-rails to the main rails, and the less the distance between the main tracks the more acute will be this angle, as will be understood by reference to the full and dotted lines in Fig. 14.

The rail I of the frog-section is connected to the crossing-rail by a plate G', which has an inclined slot k for the reception of a bolt l , carried by a lug h on the said crossing-rail, the longitudinal position of the rail-section I and its plate varying in accordance with the angle of the crossing-rail in respect to the main rail, and the angle of the slot k being such that whatever the angle of the crossing-rail in respect to the main rail the plate G will always be in line with said main rail, when the bolt l is adapted to the slot k .

The various bolts connecting the parts of the structure are provided with nuts, so that said parts can be readily connected to or detached from each other, whereby the structure, when in pieces, can be readily transported from place to place or stored in small space, but can be readily bolted together and applied to the tracks when transported to the spot where it is to be used.

If desired, the crossing-rails may be provided with spike-holes, so as to permit of the spiking down of these rails when convenient opportunities are afforded and it is thought that such additional fastening of the rails in place is desirable.

The outer switch-sections B B' may be dispensed with, if desired, although their use is preferred.

Having thus described our invention, we claim and desire to secure by Letters Patent—

1. The combination, in a temporary cross-over for street-railways, of the crossing-rails, with inner switch-sections at the opposite ends of the cross-over, each of said switch-sections comprising lifting-rails and a pivoted rail, forming a stub-switch, substantially as specified.

2. The combination, in a temporary cross-over for street-railways, of the crossing-rails, with inner switch-sections at the opposite ends of the cross-over, each of said sections comprising a base-plate for resting on the tram of the main rail, lifting-rail sections secured to said base-plate, and a swinging rail-section, forming a stub-switch, substantially as specified.

3. The combination, in a temporary cross-over for street-railways, of the crossing-rails, with inner and outer switch-section at the opposite ends of the cross-over, the outer section having a point and the inner section having switch-rails and the two sections being connected by tie-rods, substantially as specified.

4. The combination, in a temporary cross-over for street-railways, of the crossing-rails, with switch-sections at the opposite ends of the cross-over, and intermediate frog-sections, each of the latter consisting of a plate adapted to the tram of the main-track rail, and lifting-rails secured to said plate and having a gap between them for the reception of the crossing-rails, substantially as specified.

5. The combination, in a temporary cross-over for street-railways, of opposite end sec-

tions constructed for application and lateral confinement to the rails of the main tracks, with crossing-rails pivoted to said end sections, whereby the cross-over is adapted for application to main tracks at different distances apart, substantially as specified.

6. The combination of the inner switch-plate and its rails with the crossing-rail having a laterally-adjustable connection with said switch-plate, substantially as specified.

7. The combination of the crossing-rails with the frog-sections comprising base-plate and lifting-rails, and a plate connecting one of the frog-rails with the crossing-rail, said plate having an inclined slot for the reception of the securing-bolt, substantially as specified.

8. The combination of the switch-sections constructed for application to the main tracks, with the crossing-rails connected to said switch-sections and occupying such vertical relation thereto as to be supported by the pavement between the tracks and track-rails, substantially as specified.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

VICTOR ANGERER.
CHAS. A. PSILANDER.

Witnesses:

W. J. BURNS,
HARRY SMITH.