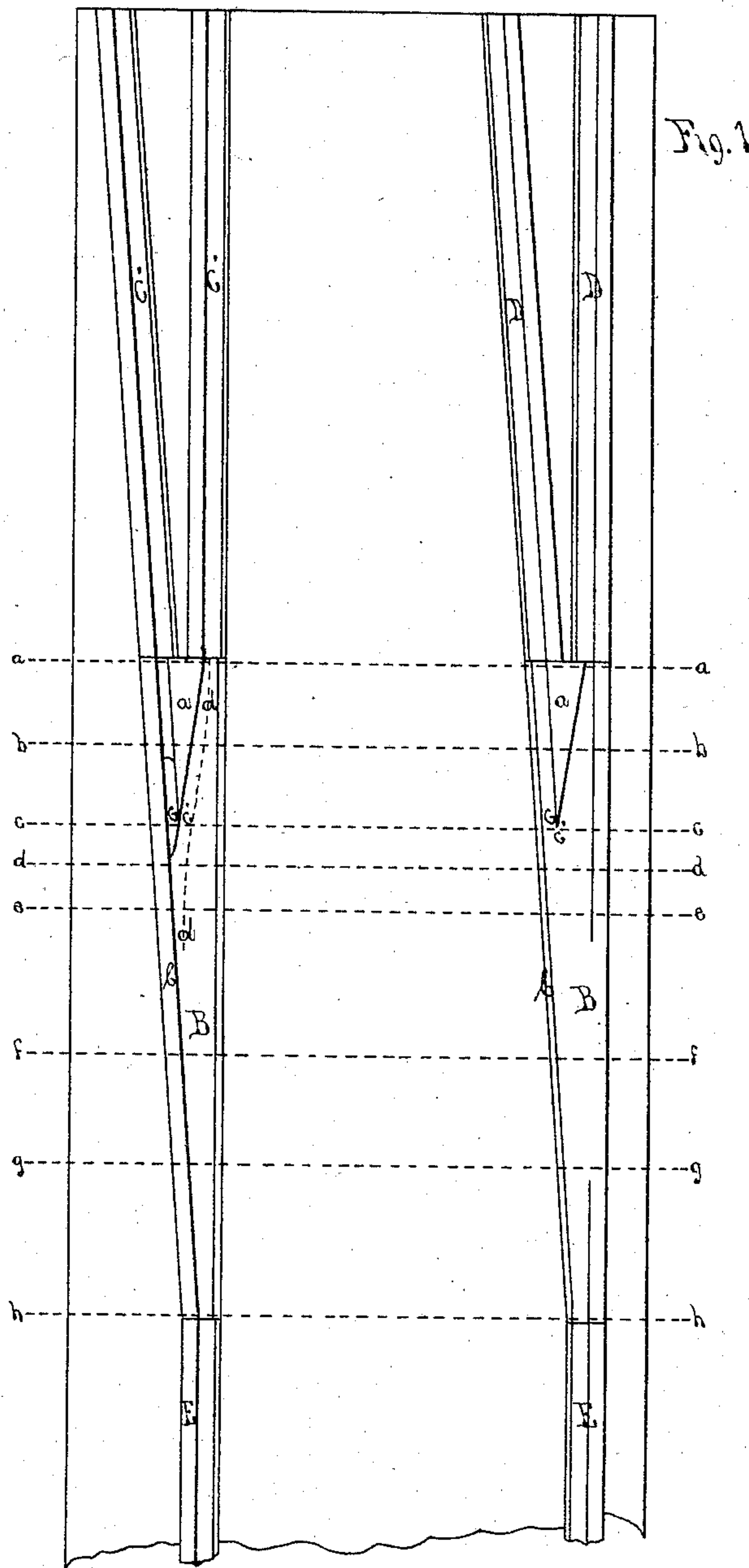


B. BEVELANDER.
Railway-Switches.

3 Sheets--Sheet 1.

No. 154,007.

Patented Aug. 11, 1874.



Witnesses.

*N. Brown
John & Lerane*

Inventors.

Benjamin Bevelander

B. BEVELANDER.
Railway-Switches.

3 Sheets--Sheet 2.

No. 154,007.

Patented Aug. 11, 1874.

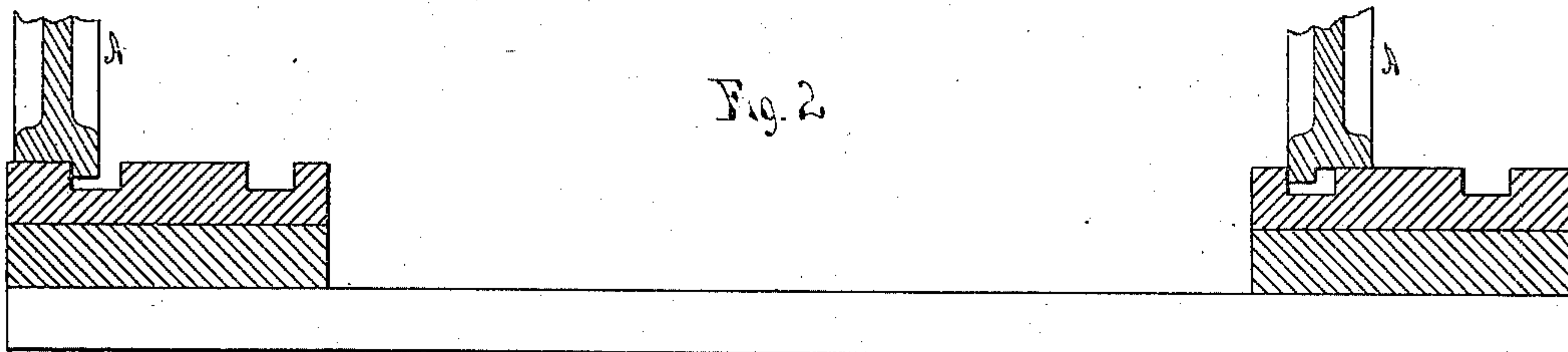


Fig. 2

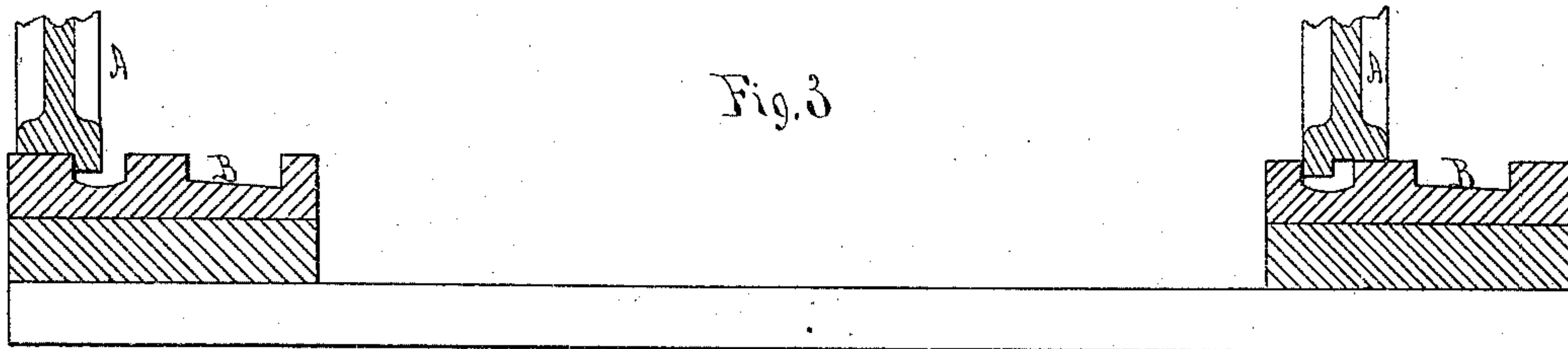


Fig. 3

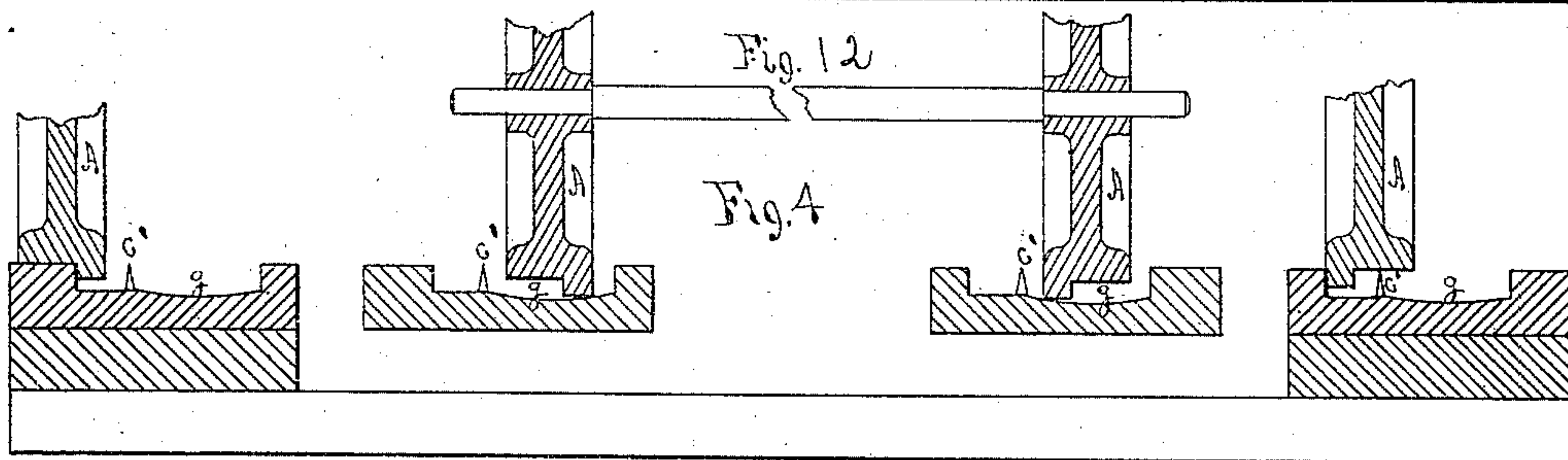


Fig. 4

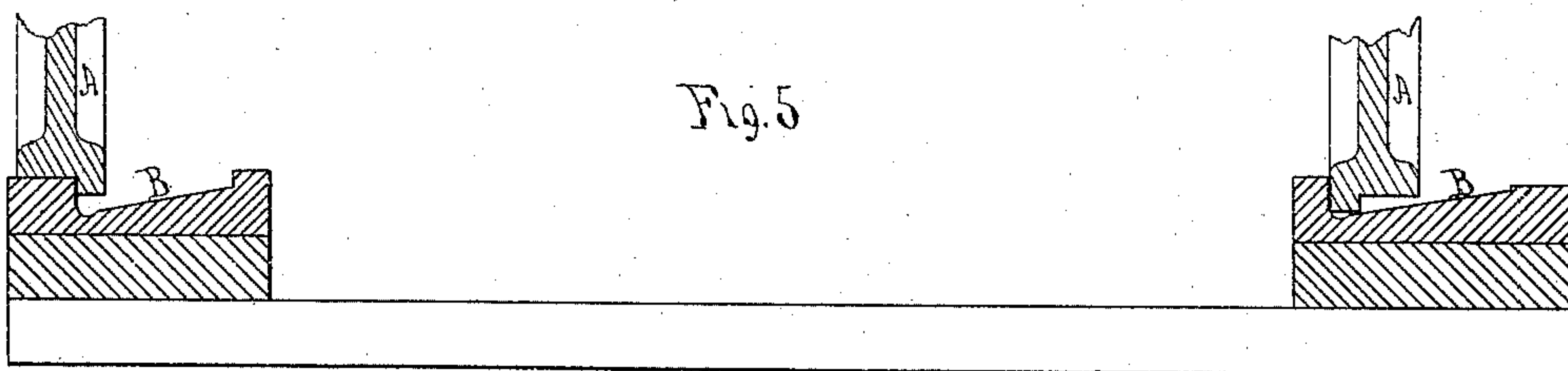


Fig. 5

Witnesses:

N. Brown
John E. Crane

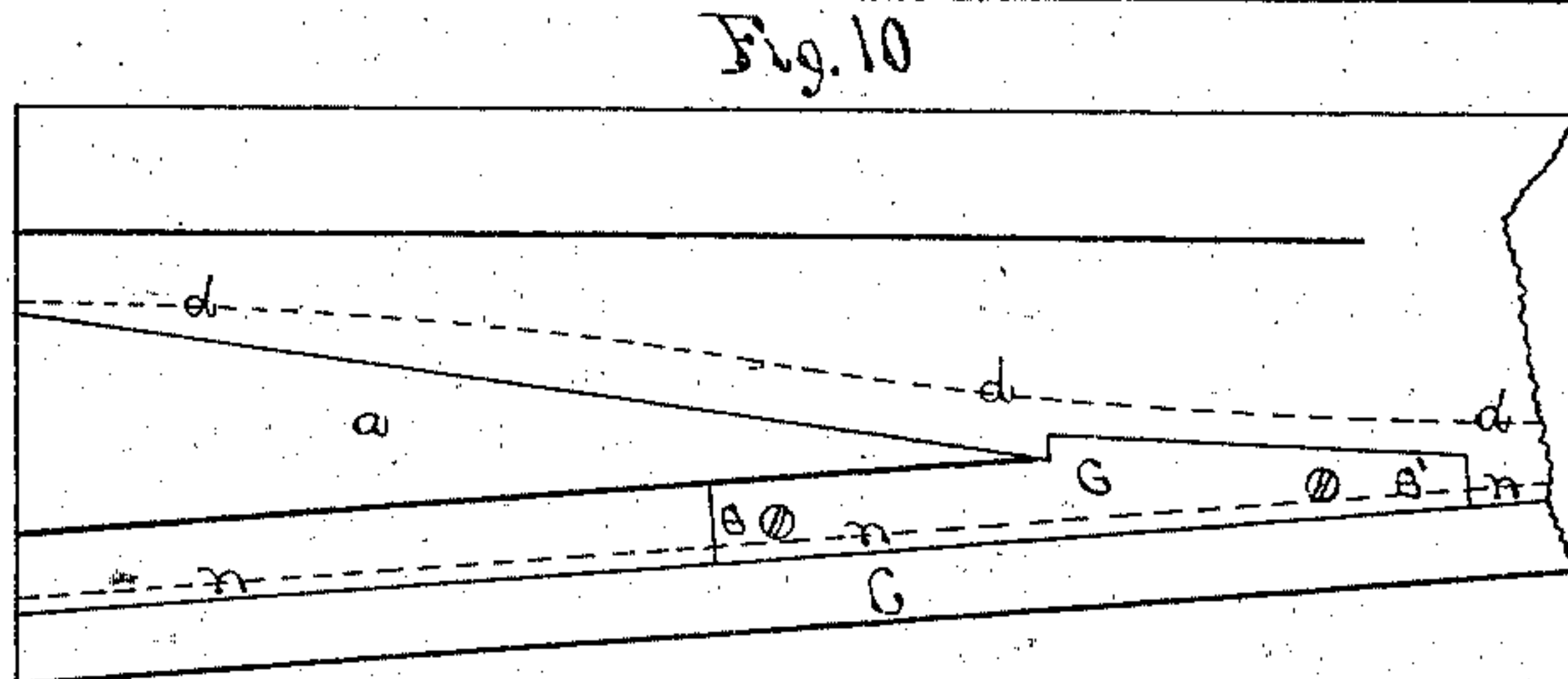
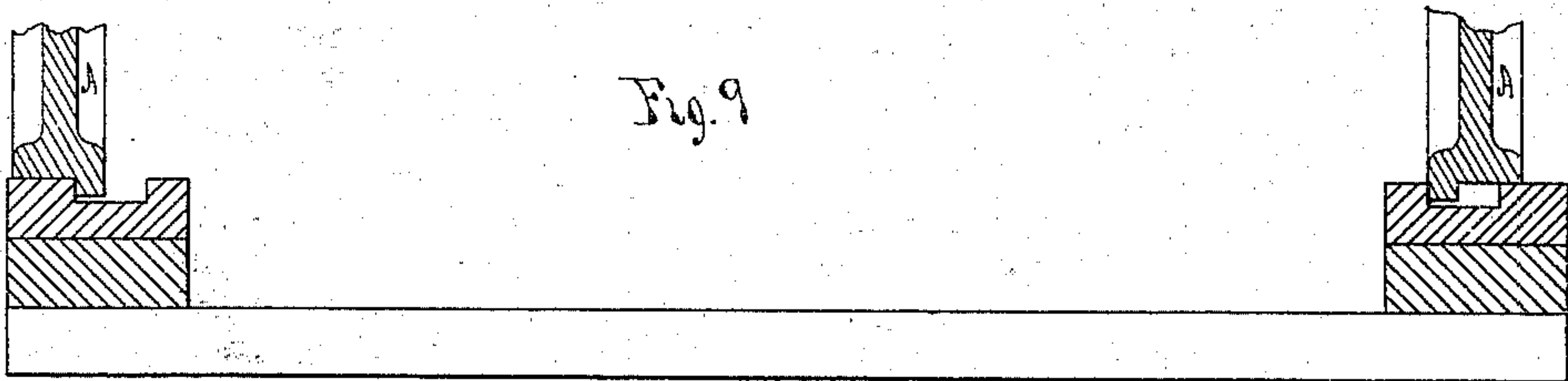
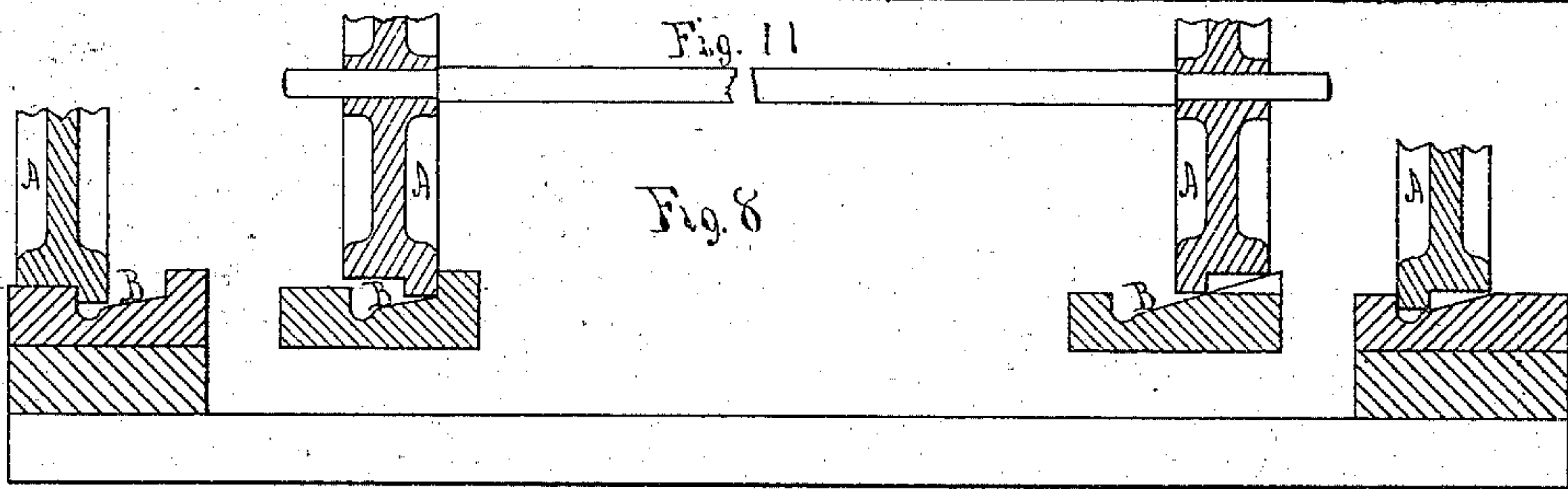
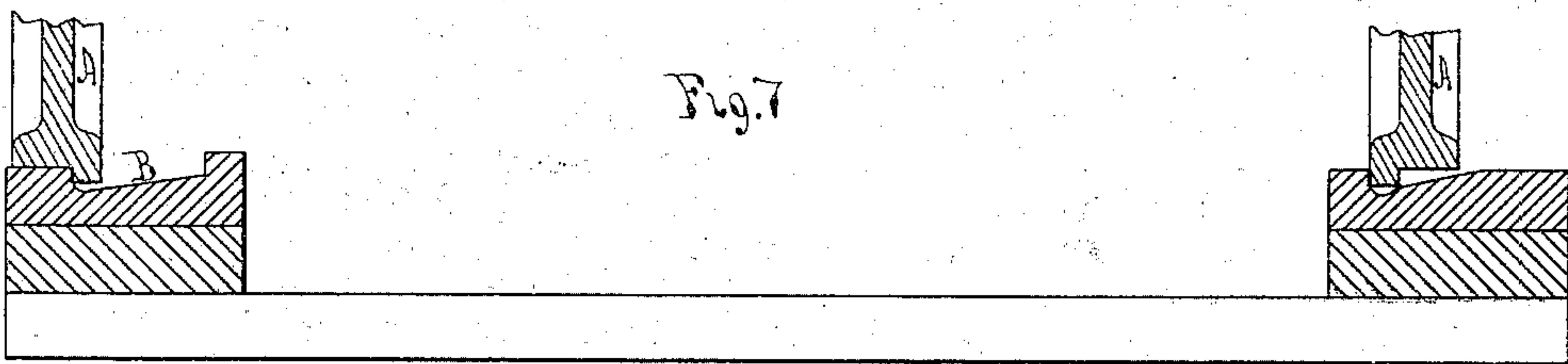
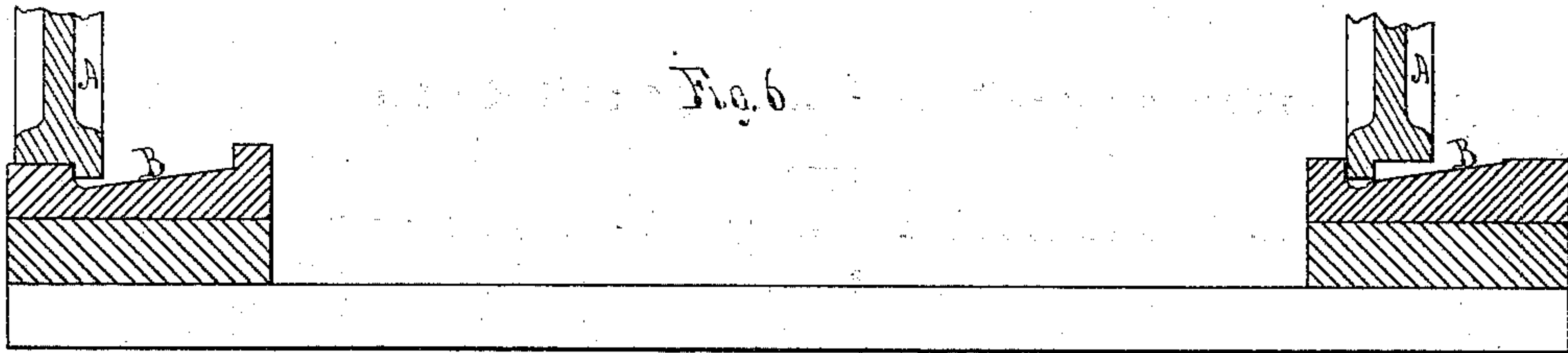
Inventors.

Benjamin Bevelander

B. BEVELANDER.
Railway-Switches.

No. 154,007.

Patented Aug. 11, 1874.



Witnesses.
A. Brown
John E. Leane

Inventors.

Benjamin Bevelander

UNITED STATES PATENT OFFICE.

BENJAMIN BEVELANDER, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND SIMEON L. PUTNAM, OF SAME PLACE.

IMPROVEMENT IN RAILWAY-SWITCHES.

Specification forming part of Letters Patent No. **154,007**, dated August 11, 1874; application filed July 16, 1874.

To all whom it may concern:

Be it known that I, BENJAMIN BEVELANDER, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Railway-Switches, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan or top view. Figs. 2 to 9, inclusive, are cross-sections of Fig. 1 on the lines *a a*, *b b*, *c c*, *d d*, *e e*, *f f*, *g g*, and *h h*, respectively, each showing the positions of the car-wheels when upon or passing the points indicated by lines *a a* to *h h*, inclusive, in Fig. 1. Fig. 10 represents a plan of a portion of one of the switch-rails constructed with a removable or detachable wheel-guide, *G*, which, in Fig. 1, is represented as being a fixture.

This invention relates to, and consists of, certain new and useful improvements in the railway-switches which are used in the tracks of horse-railroads, for turning or guiding the cars from one track or route to another, the principal new features being fixed inclined switch-rails, or switch-rails constructed with inclines *B*, by and upon which to slip the wheels laterally, or to cause them to slide down the inclines by force exerted laterally upon the car, and thus to guide such car one way—say, to the left.

In guiding or in running the car, say, to the right, the wheels follow on the top of the incline, and little or no force need be exerted to guide or run the car this way.

Another new feature in my invention is the fixed or movable wheel-guide *G* in one or both of the switch-tracks, this wheel-guide being located at or opposite the point of the fixed switch point or dummy *a*, and extending in opposite directions longitudinally, as clearly shown in Fig. 10. The highest part of this wheel-guide is generally at, or nearly opposite, the point of the dummy, or a little forward of that point, and each end, *e*, of said guide slopes off to a level with the bottom of the groove in the rail, so as to allow the car-wheels to rise and run readily over the guide

in either direction. The end portion *e'* of the guide *G* is generally raised above the bed or groove *d* in the rail, so as to insure the passage of the rear car-wheels in the right direction, say, about on the line *d*, (seen in Fig. 10,) the rear wheels being liable, if pushed with unusual force, to slide down the inclines when running thereon before reaching the point of each fixed dummy; but, when the car is run, say, to the left, both the forward and rear wheels follow on the line *n* close to the rail-flange *C*, and directly over the guide *G*, and there is no liability of the wheels missing the groove when running in either direction.

In running a car from the single track or rails *E*, and over the switch-rails, the car-wheels naturally run to the highest part of each incline, *B*, and, as a consequence, little or no lateral force is required to guide the car in the right direction, say, to the right, or to the track or rails *D*, and when running a car from the single track or rails *E*, and over the switch-rails, and to the left-hand track or rails *C'*. Slight lateral force exerted on the forward end of the car will slip or slide the forward wheels down the inclines *B*, and against the side rail-flanges *C*, where such wheels are followed by the rear car-wheels on the line *n*, and over the guide *G*, as before described.

Figs. 2, 3, 4, 5, 6, 7, 8, and 9 represent sections of car-wheels on different parts of the switch-rails, and all running to the left, and to the track or rails *C'*; and Figs. 11 and 12 represent sections of car-wheels, each on one of the lines *a* to *h*, inclusive, on Fig. 1; and Figs. 11 and 12 represent, also, sections of car-wheels on the switch-rails, and both running to the right, and to the track or rails *D*, Fig. 11 being on the line *c*, and Fig. 12 being on the line *g* in Fig. 1. Fig. 12 shows the car-wheels *A* in their natural running position on the highest part of each incline; and Fig. 12 shows the relative position of the car-wheels as they are passing the points *C'* of each dummy *a*, and going in the direction of the double track, each wheel having followed about on the line *d*. (Seen in Fig. 10.)

The ends of the switch-rails on the line *h h*

of Fig. 1 are intended to be level or horizontal, so also the bottom of the groove in each rail, and each incline is intended to commence a little inside of the end, or between the lines *h* and *g* in Fig. 1. Each incline rises to a sharper pitch to about the center of the switch-rail, or, say, on the line *f f* on Fig. 1. Said inclines are then gradually flattened to about the line *c c*, where the bed or groove in the switch-rail may be horizontal or slightly curved and hollow, as at *g* in Figs. 12 and 4.

We have described the construction and the uses of the wheel-guides *G*. These, however, are not a necessity, since the car-wheels will generally be guided, or will run correctly to either of the two tracks or rails, *D* or *C'*, without the aid of these guides; but if, from any cause, the rear car-wheels should slip or slide

down the inclines before they reach the points *c'* of the fixed switch-points or dummies *a*, when the car is passing, say, to the right-hand track *D*, then the wheel-guides shear the rear wheels to the right side of the fixed dummies, and cause them to follow the forward wheels.

I claim as my invention—

1. The switch-rails constructed with inclines *B*, in combination with the fixed switch-points or dummies *a*, substantially as described.

2. The wheel-guides *G*, constructed as described, in combination with the inclined switch-rails, and with the fixed dummies *a*, substantially as described.

BENJAMIN BEVELANDER.

Witnesses:

N. BROWN,

JOHN E. CRANE.