

(No Model.)

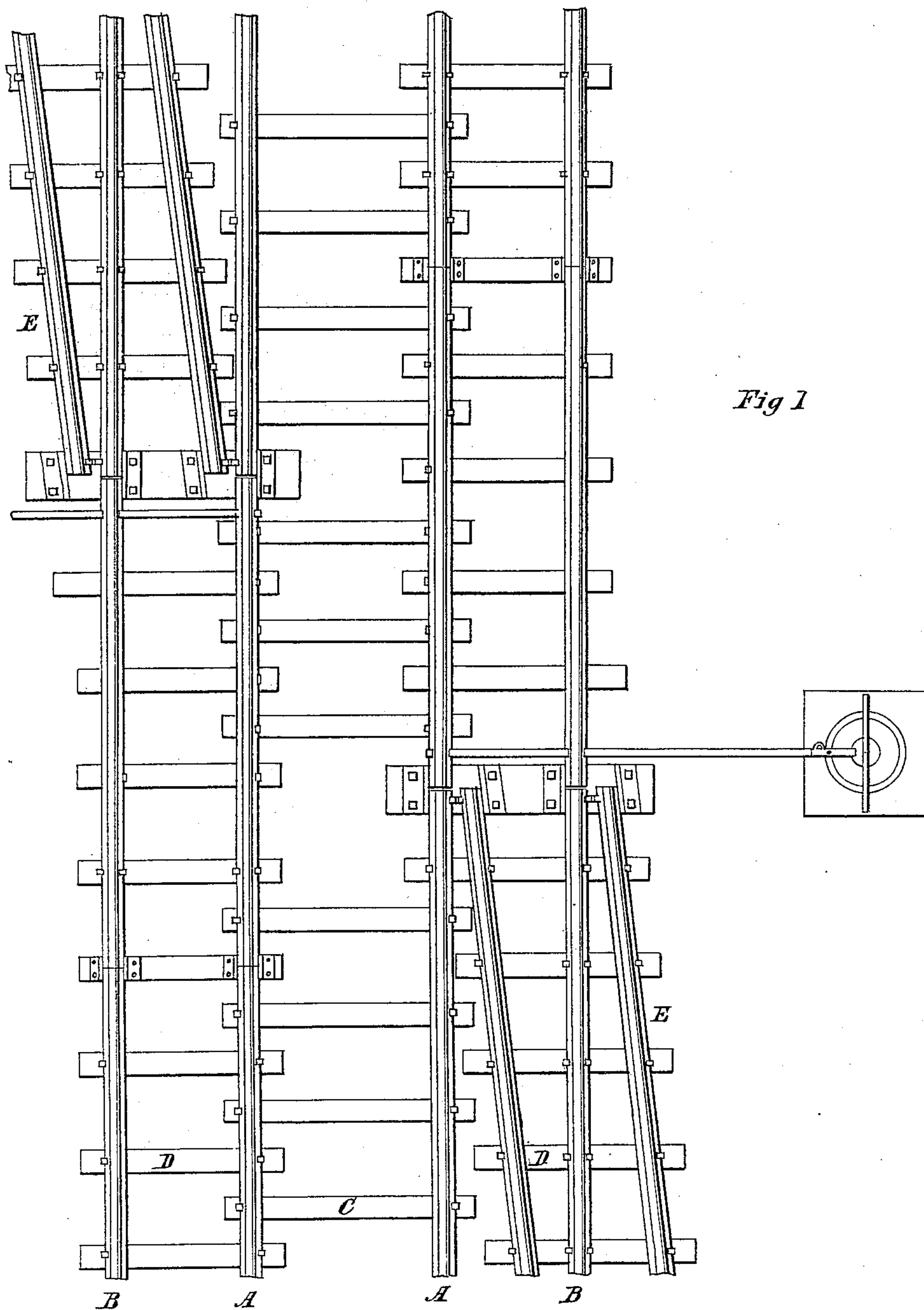
3 Sheets—Sheet 1.

A. M. BILLINGS.

SYSTEM OF TRACKS FOR RAILWAYS.

No. 248,840.

Patented Nov. 1, 1881.



Witnesses

W. C. Corlies
Alice Hallister

Inventor

Albert M. Billings

By *Robert Thacker*
Attorneys

(No Model.)

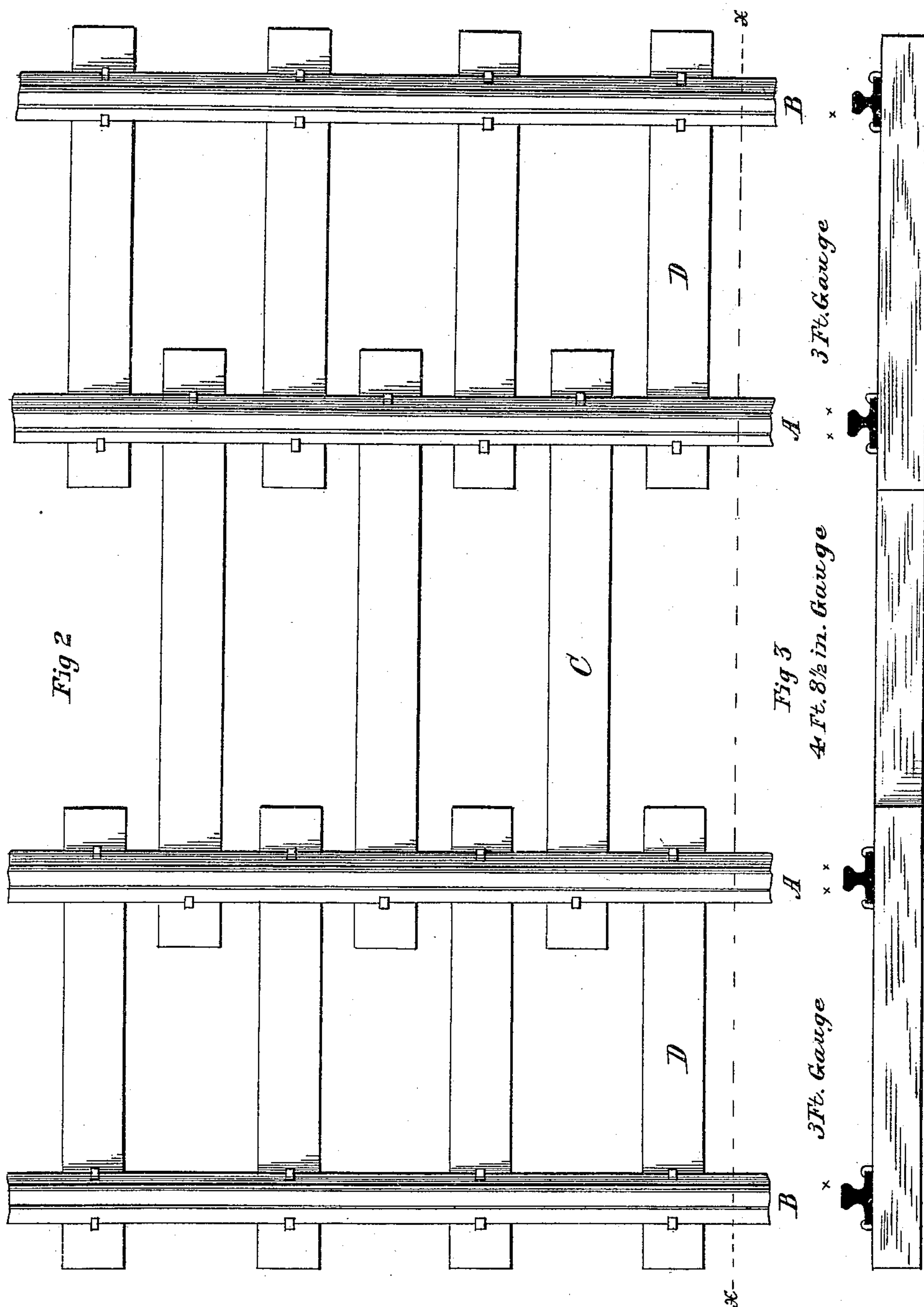
3 Sheets—Sheet 2.

A. M. BILLINGS.

SYSTEM OF TRACKS FOR RAILWAYS.

No. 248,840.

Patented Nov. 1, 1881.



Witnesses

W. C. Corlies

Alice Hallister.

Inventor

Albert M. Billings

By *Robert Thacher*
Attorneys

(No Model.)

3 Sheets—Sheet 3.

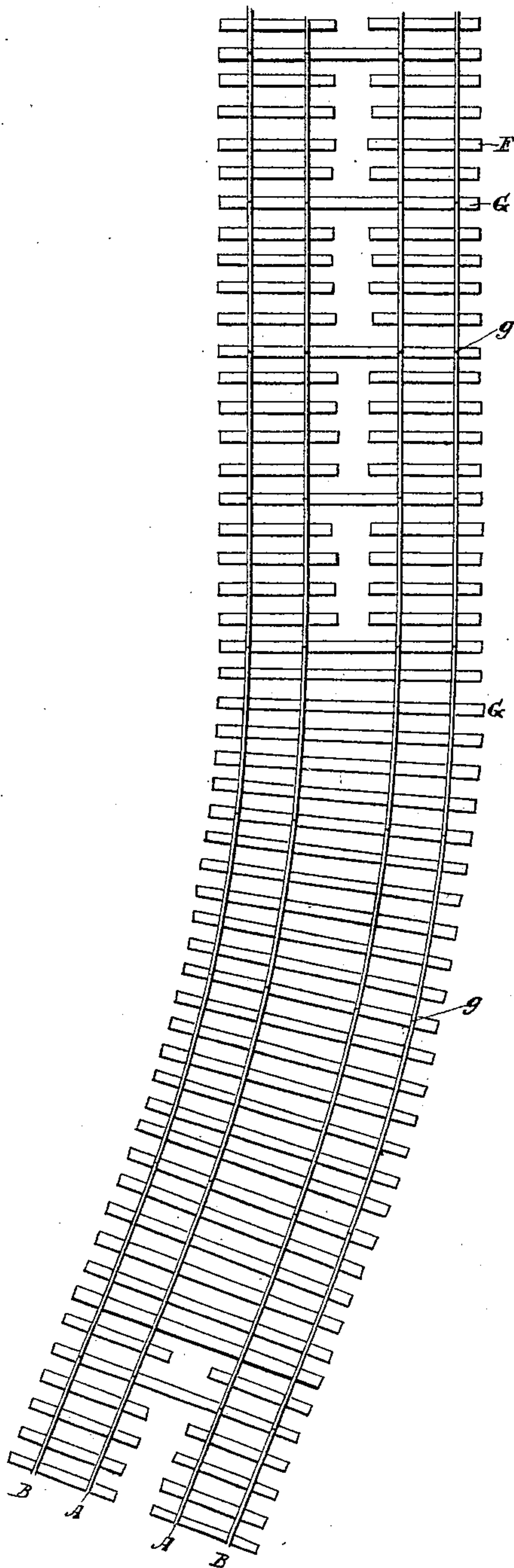
A. M. BILLINGS.

SYSTEM OF TRACKS FOR RAILWAYS.

No. 248,840.

Patented Nov. 1, 1881.

Fig 4



Witnesses

W. C. Corlies
Alice Hallister

Inventor

Albert M. Billings

By *Cornwall & Thacher*
Attorneys

UNITED STATES PATENT OFFICE.

ALBERT M. BILLINGS, OF CHICAGO, ILLINOIS.

SYSTEM OF TRACKS FOR RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 248,840, dated November 1, 1881.

Application filed January 31, 1881. (No model.)

To all whom it may concern:

Be it known that I, ALBERT M. BILLINGS, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented a certain new and Improved System of Tracks for Railways, which is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a plan view of a series of railway rails and shunts arranged according to my improvement; Fig. 2, a similar view of a section of the line-tracks on an enlarged scale; Fig. 3, a vertical section of the same, taken on the line *x x*, Fig. 2, and Fig. 4 a plan view of a section of line-tracks, showing the method of "tieing."

My invention relates to a system of railway-rails, whereby several tracks or ways are obtained of the same or different gage without the employment of separate rails for each track.

It has become an established fact that a narrow-gage railway provides a much cheaper line for the transportation of freight than one with a broad gage; but it is also an established fact that the broad-gage way is much better adapted to fast-running trains for the transportation of passengers and mail matter.

It is the object of my improvement to secure in one and the same system the advantages of both broad-gage and narrow-gage tracks by arranging several rails in combination, so as to provide a broad-gage track for passenger and mail cars, and narrow-gage tracks for freight transportation without building separate and independent tracks for each.

The invention consists in the peculiar arrangement of rails, whereby three railway-tracks are obtained with only four separate rails.

I will proceed to describe one mode of carrying out my invention, whereby one broad-gage and two narrow-gage tracks are obtained, and the special improvement which I believe to be new and desire to secure by Letters Patent will then be pointed out more definitely in the claims.

In the drawings, *A A* represent two rails, which are arranged at a distance apart now generally adopted as a standard gage for ordinary railway-tracks—that is, four feet eight

and one-half inches. On the outside of each rail *A* another rail, *B*, is arranged at such a distance from the rail *A* as will provide a track on each side of the gage now generally adopted as the standard for narrow-gage railways, which is three feet. The middle rails, *A A*, are laid upon ties *C* in the usual manner, and the outside rails are laid upon ties *D*; but these latter ties are arranged alternately with the ties *C*, project inward between the respective ends of the latter, and the middle rails, *A*, are spiked to the inner ends of the ties *D*, as well as to their main ties *C*. Obviously by this arrangement of the rails a middle track of ordinary broad gage is provided and two tracks of the standard narrow gage; all with the use of only four rails. It is also obvious that with this arrangement of rails and of ties, as shown in the drawings, the four rails are all connected together so as to make a permanent system, which is firmer and much more substantial than if the three tracks were separate and independent of each other.

In Fig. 4 of the drawings I have shown a somewhat different mode of arranging the ties, which I prefer. In this arrangement on straight sections of the road short ties are employed for the outside tracks, which correspond to the ties *D*. (Shown in Fig. 2 of the drawings.) The central short ties, *C*, are not used; but long ties *G* are laid at the joints *g* of the rails, running through from one outside rail to the other. On curved sections of the road these long ties *G* are used entirely, as shown on the curve in the drawings. These long ties are necessary on curves to resist the side strain on the track on which the cars are running, and the track should be tied together in the same way wherever there is special side strain to resist.

In operating a line of tracks arranged as described above, it is my plan to run fast mail and passenger trains on the middle broad-gage track formed by the inner rails, *A A*, and to run freight trains on the outside or narrow-gage tracks formed by the rails *A* and *B*, respectively, one of these tracks being intended for an up line and the other for a down line. It will readily be seen that this plan is perfectly feasible with the system of rails shown and described, provided shunts are put in at suitable points to permit trains to pass each

other. These shunts will, of course, be necessary on each of the outside tracks, in order to permit the fast trains to pass the slower freight trains on one of the narrow-gage tracks and the similar trains which they meet on the other narrow-gage track. I have shown in Fig. 1 of the drawings a shunt, E, on each side of the system for this purpose. These shunts must, of course, be put in wherever the running schedule of the trains makes it necessary to provide for trains passing each other. Of course no precise instruction can be given, therefore, for the location of shunts, but it can be readily determined by any one familiar with the management of railroads from an inspection of the schedule prepared for the running of trains. It will be seen, too, that means must be provided for fast trains passing each other on the middle track, and if on any line this shall be found necessary at other points than regular stations, shunts for this purpose will also be required. I have not shown any arrangement of the latter shunts in the drawings, for their location and arrangement will be readily determined by the peculiarities of each case, and their construction is a mere matter of detail in road-building, which it is not necessary to here describe. It will thus be seen that provision is made for a broad-gage track on which fast trains may be run, while, with the addition of two rails, two additional narrow-gage tracks are provided for freight trains, thus securing in one and the same system of rails the advantages of both broad-gage and narrow-gage tracks for the special purposes for which they are especially adapted.

I have mentioned certain gages for the tracks, but of course my invention is not limited to these particular gages, for any other may be adopted; but as it is an important feature of my plan to provide for a cheap transportation of freight, especially agricultural products from the west to the east, my system necessarily contemplates a narrow gage

for the freight-tracks, for the reason that such railways have already been proved much cheaper for freight purposes. This system also provides for the direct connection of narrow-gage-feeders with trunk-lines, so that cars may be shipped through without breaking bulk—a serious obstacle to the successful working of narrow-gage railways at the present time. The system also provides for transportation from one part of the country to another without breaking bulk with any gage, for the middle or ordinary gage track may be used for freight purposes as well as the narrow-gage tracks, so that with this improvement the products of the country and goods of any kind may be shipped from one locality to any other locality without breaking bulk or transshipment, and thus an advantage is obtained over the system now in use, which provides no practical accommodation for different gages.

The precise arrangement of ties shown in the drawings may be modified, but I prefer such an arrangement as will rigidly connect together the several rails of the system. The system may be extended by the addition of rails and such a combination of gages obtained as may be desired in any special case.

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

1. The central rails, A, arranged at broad-gage distance, in combination with the outside rails, B, arranged at narrow-gage distance from the former respectively, substantially as and for the purpose set forth.

2. The inner-track rails, A, in combination with the outer rails, B, the four constituting three main-line tracks, the short ties F and the long ties G, substantially as and for the purpose set forth.

ALBERT M. BILLINGS.

Witnesses:

JOHN S. ZIMMERMAN,
GEO. A. MILLIKEN.