

(No Model.)

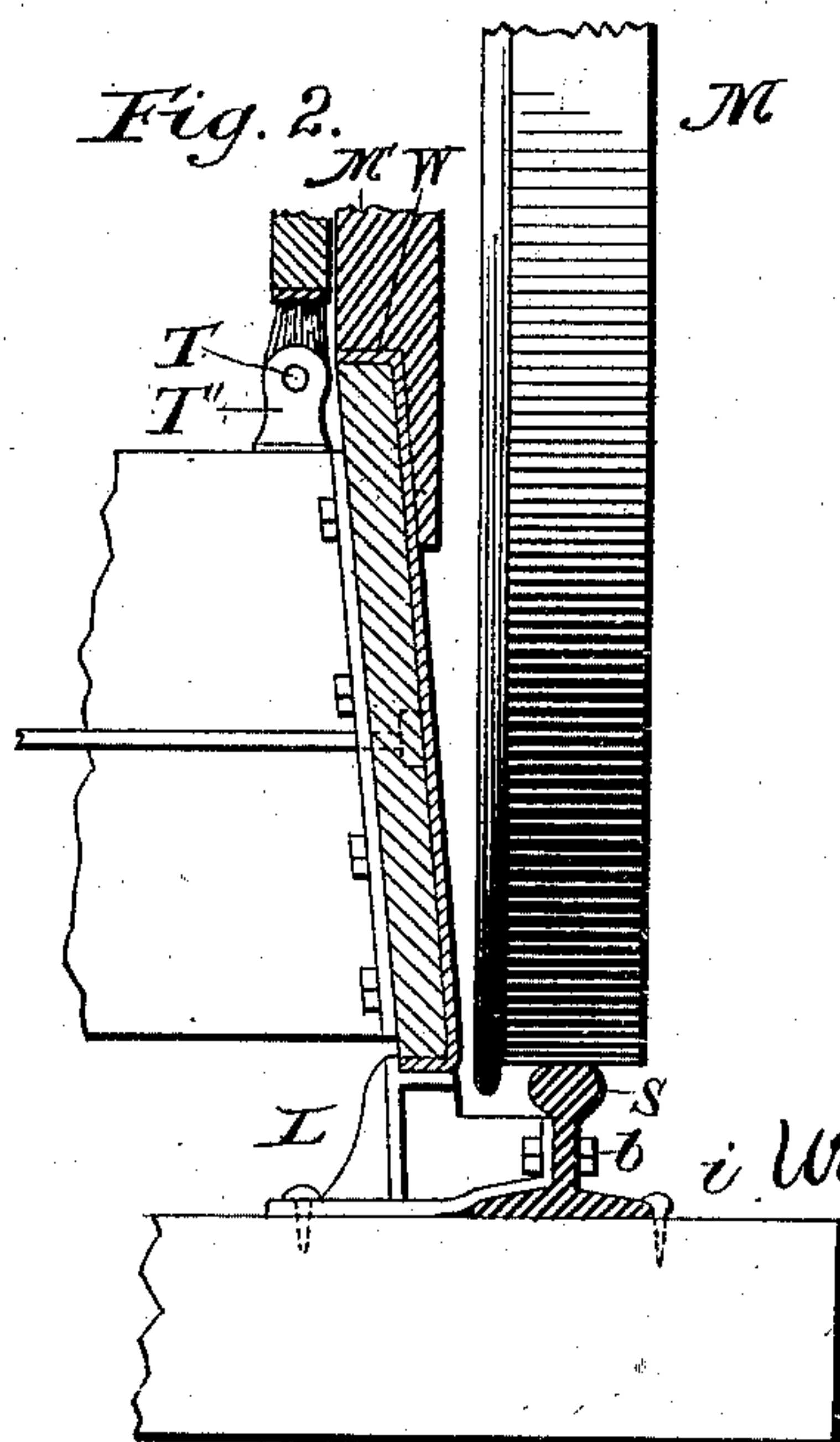
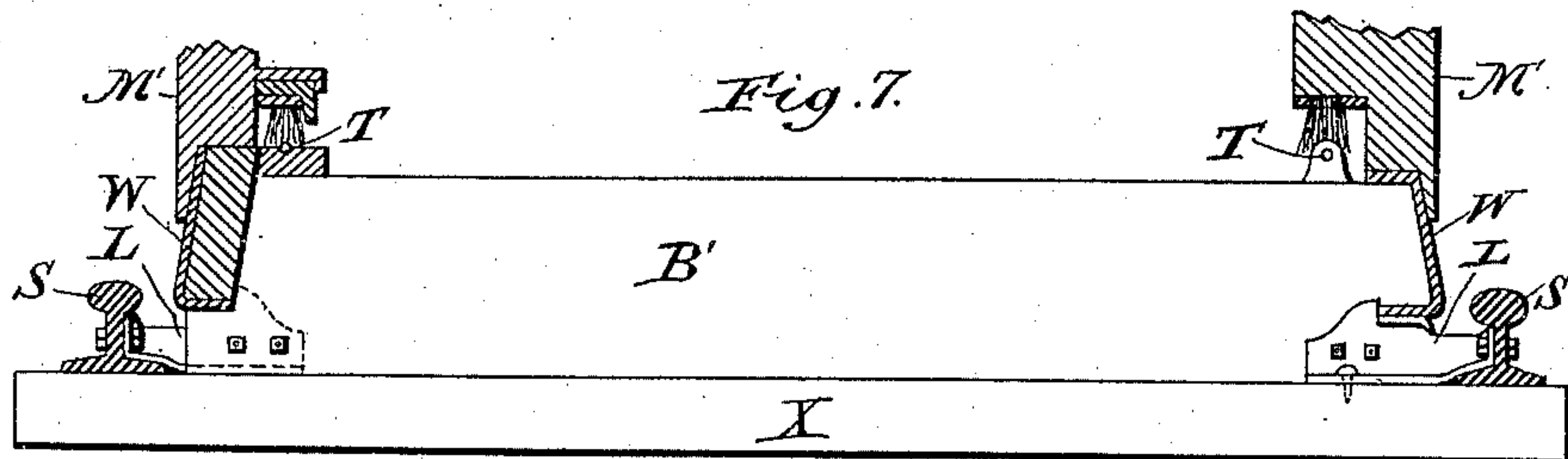
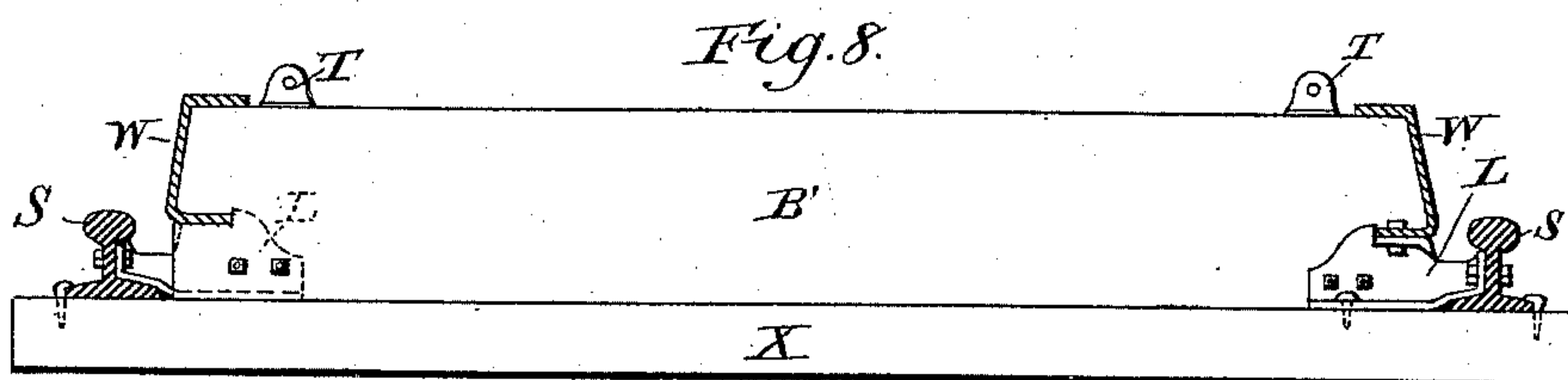
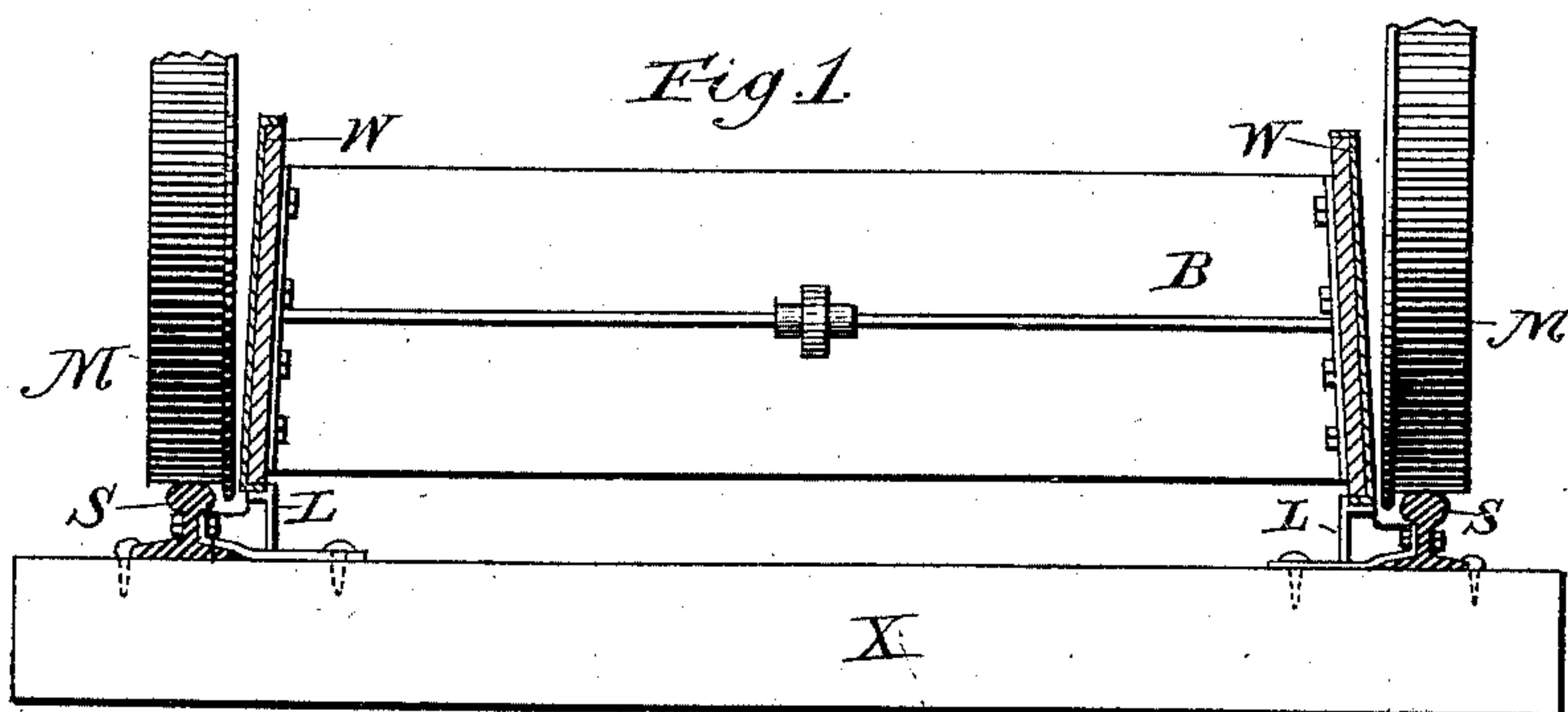
3 Sheets—Sheet 1.

W. F. GOODWIN.

CONSTRUCTION AND OPERATION OF RAILROADS.

No. 370,534.

Patented Sept. 27, 1887.



Witnesses:

Wm. P. Moss
Ada Goodwin

Inventor.

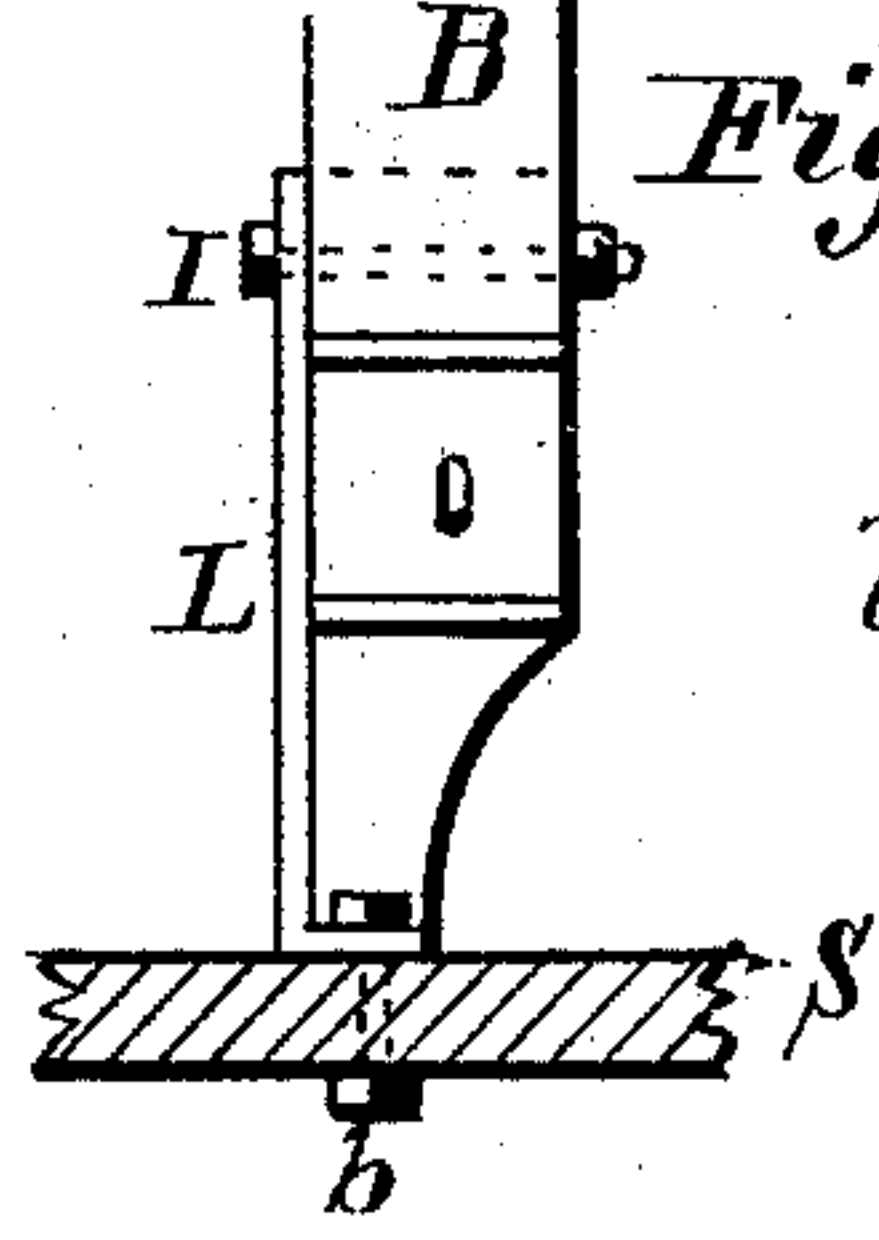
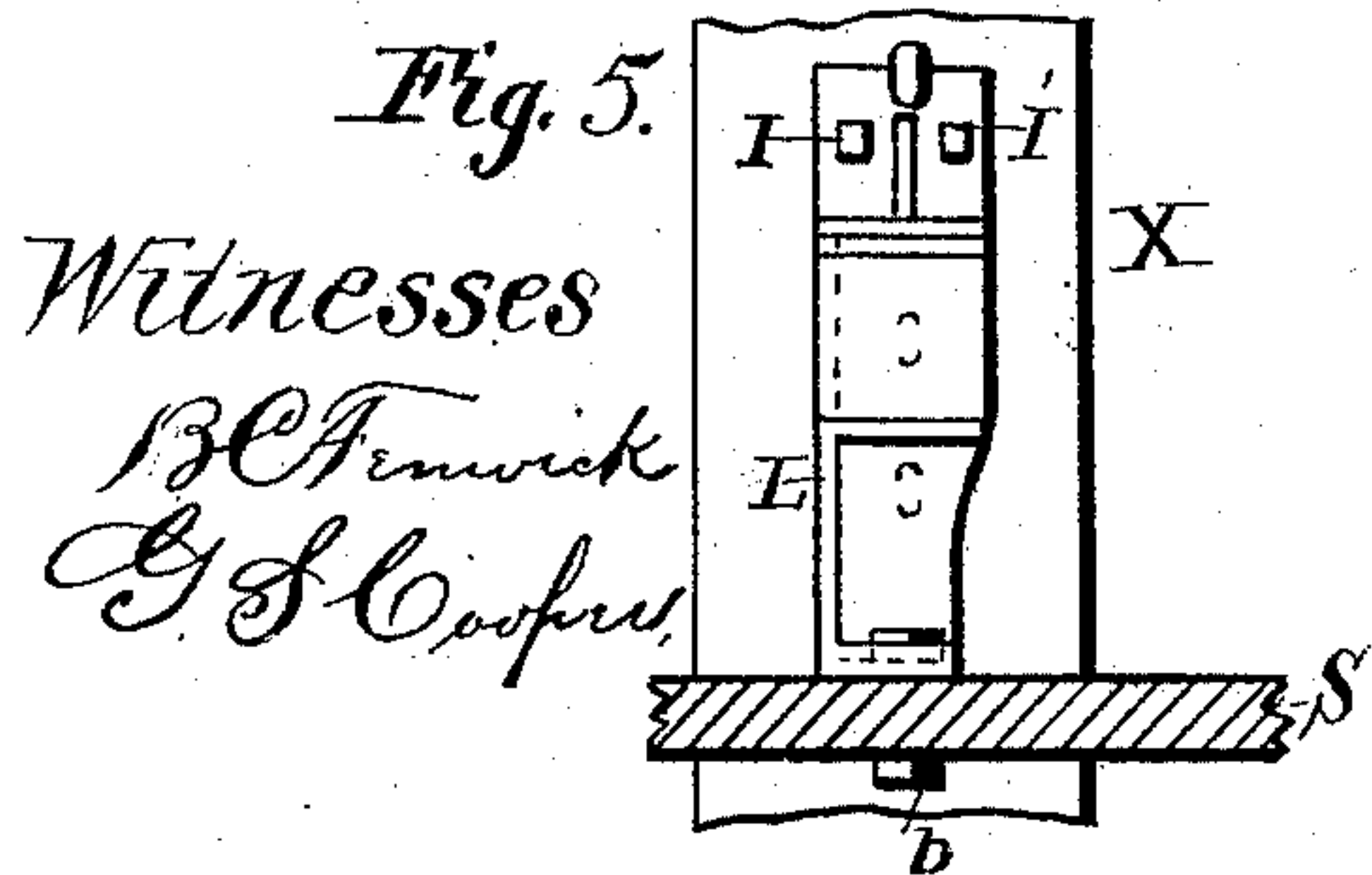
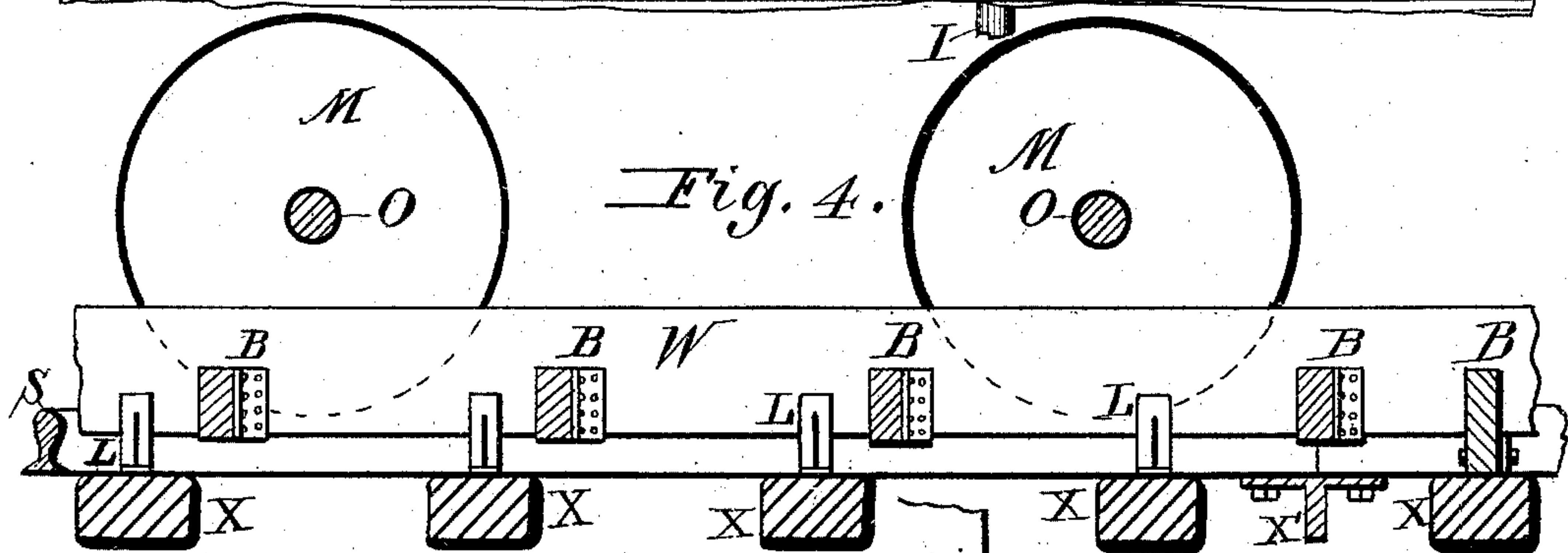
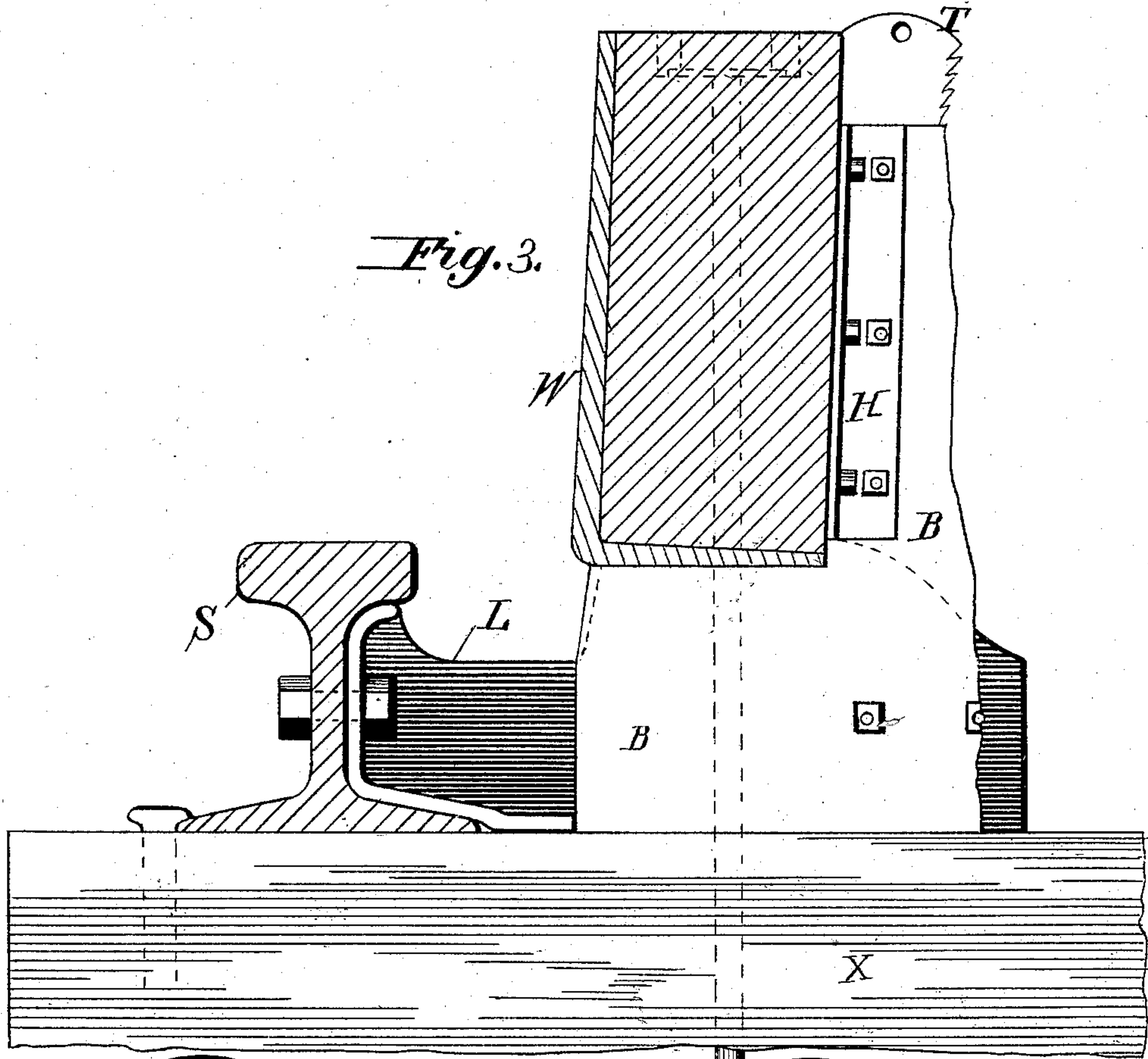
William Farr Goodwin

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CONSTRUCTION AND OPERATION OF RAILROADS.

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Witnesses
B. C. Fenwick
G. S. Cooper.

Inventor
William F. Goodwin

(No Model.)

3 Sheets—Sheet 3.

W. F. GOODWIN.

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Fig. 9.

Patented Sept. 27, 1887

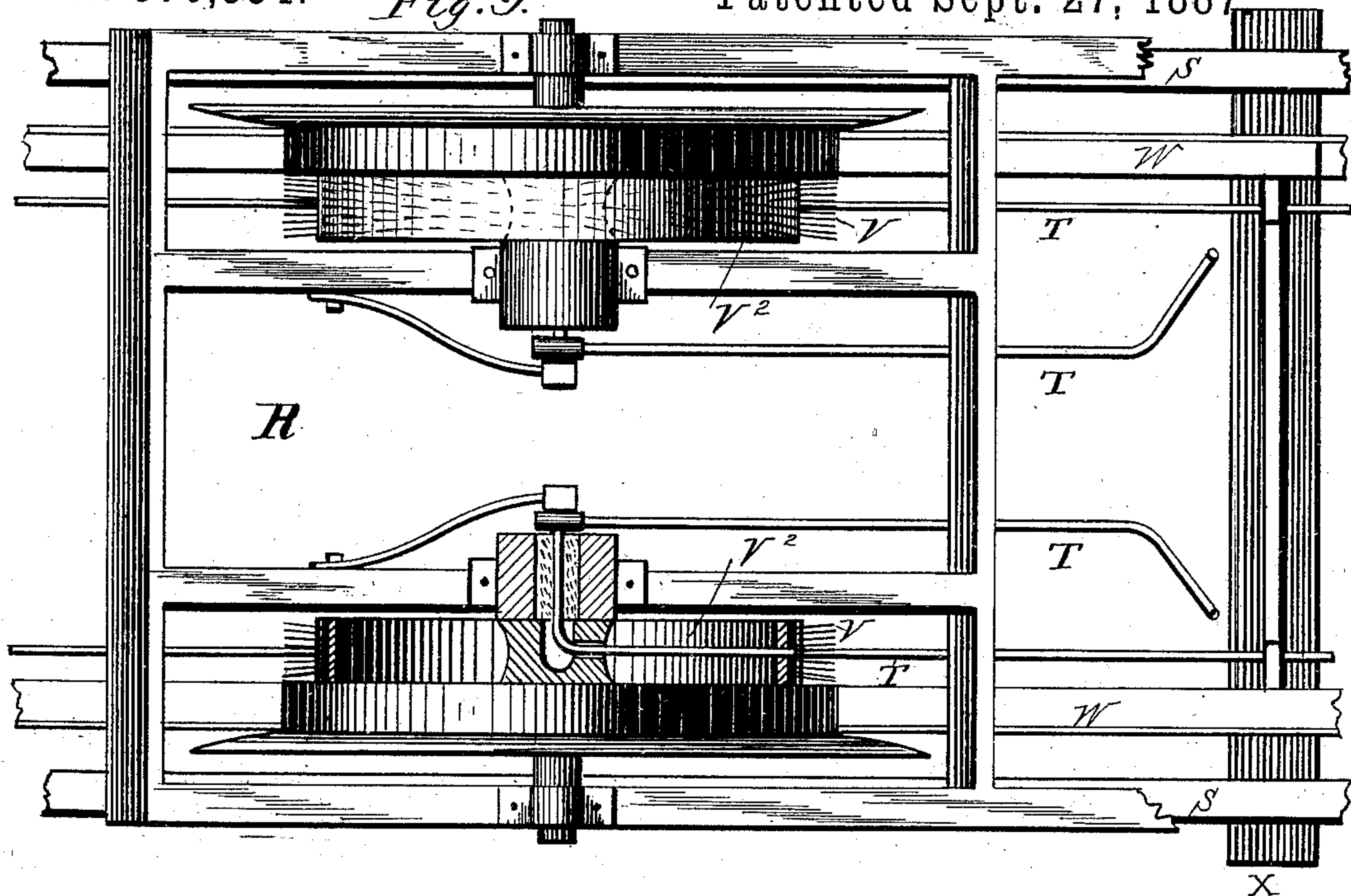


Fig. 10.

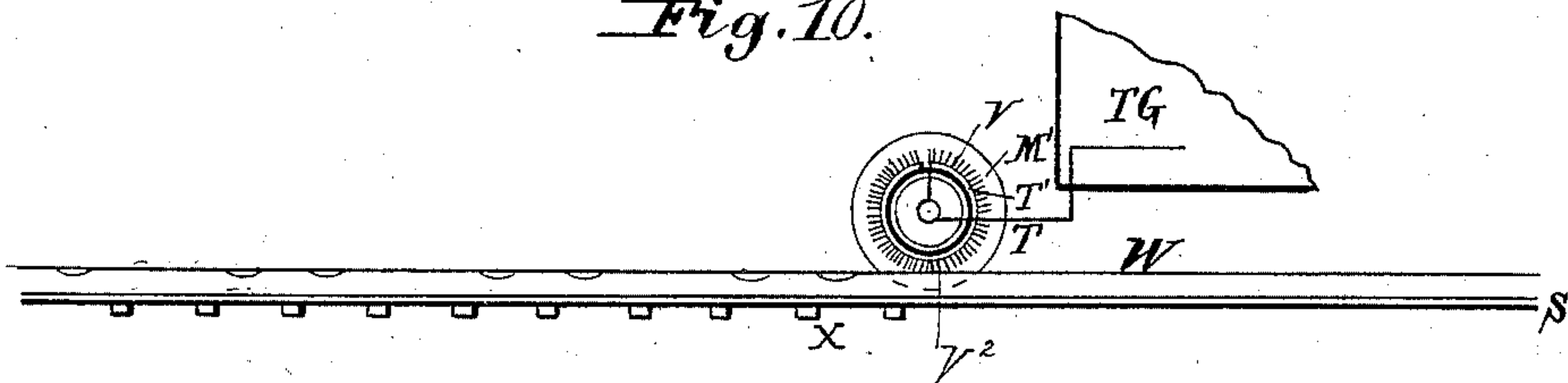
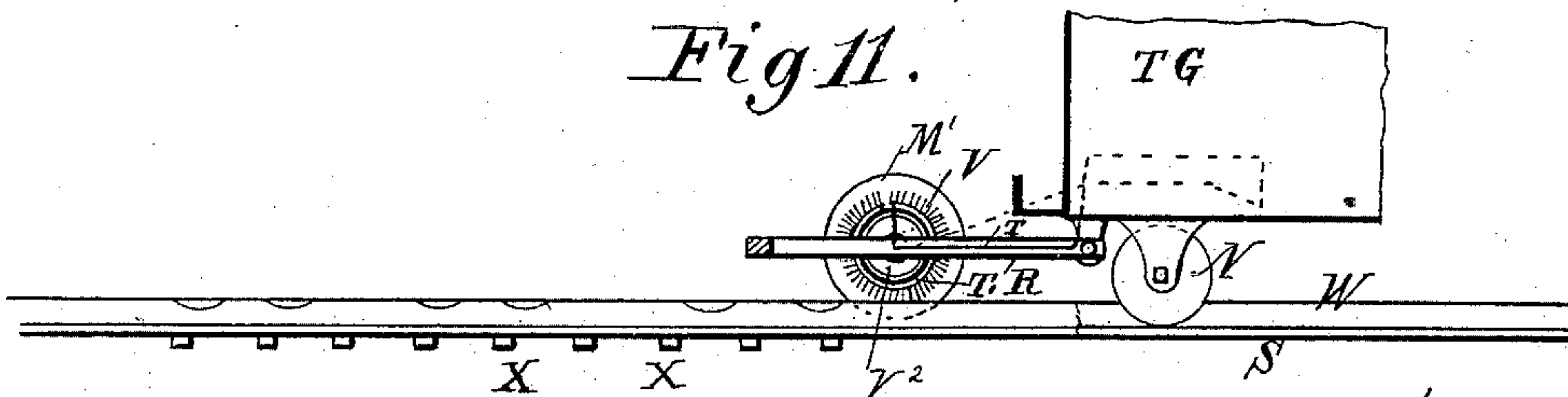


Fig. 11.



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UNITED STATES PATENT OFFICE.

WILLIAM FARR GOODWIN, OF STELTON, NEW JERSEY.

CONSTRUCTION AND OPERATION OF RAILROADS.

SPECIFICATION forming part of Letters Patent No. 370,534, dated September 27, 1887.

Application filed May 27, 1886. Serial No. 203,395. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM FARR GOODWIN, a native citizen of the United States, residing at Stelton, in the county of Middlesex and State of New Jersey, have invented certain new and useful Improvements in Permanent Surface Railroads, of which (together with the annexed drawings) the following is a specification.

My invention relates to improvements in railroads, and is an improvement upon my patent, No. 326,212, dated September 15, 1885, and the objects of my improvements are:

First. To provide a practical and economical means of employing the laterally-inclined elevated guide W of my said patent, No. 326,212, with the common rail, S.

Second. To provide the most economical means of supporting and protecting a telegraph-wire in connection with the guides W of the said patent.

Third. To provide the most economical track and guide for a suitable truck or traveling conveyer or transmitter of electricity to operate upon in connection with the train.

Fourth. To provide a suitable truck or vehicle adapted to operate upon the said guides W as its track and to receive and support any suitable telegraphing apparatus, which latter may be arranged as illustrated or in any other suitable manner. (The telegraphing apparatus illustrated is not claimed in this application, but is shown and described in connection with the improved guide W, the improvement on which is claimed as part of this invention.)

Fifth. To economize the material necessary for the guide W, and to provide a means of securing the guide W and rail S to the tie X and to each other, and to provide a means of escape for water, ice, or other matter, which can pass from the top of the rail S down between the latter and the guide W of this improvement, thus clearing the top of the rail S; also to facilitate the taking out and putting in of ties X when repairing the roadway.

I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical transverse section of the guide W and rail S, viewed from the middle of the track; also showing the bracket L in its function of supporting the guide W and

securing it to the rail S and securing both of the latter to the cross-tie X; also showing the lower parts of the wheels M in their position relative to the guides W and rails S. Fig. 2 is a similar view of one rail S, one guide W, and part of one wheel M, and one bracket-support L; also showing a telegraph-wire, T, in transverse section, supported by its bracket T', and also showing the lower part of the truck-wheel M', with its brush-wheel V, in transverse section. Fig. 3 is a similar view of the guide W and bracket L modified. Fig. 4 is a side view of the improvements viewed from a point between the rails S, the braces B and ties X being in section. This view shows the relative positions of the several parts. Fig. 5 is a top view of the bracket L. (Shown in Figs. 1, 2, and 5.) Fig. 6 is a similar view of the same, modified as shown in Figs. 3, 7, and 8. Figs. 7 and 8 show modifications of Fig. 2. Fig. 9 is a top view of a truck adapted to run upon the top of the guide W; also showing a system of mechanism for a medium of transmission of electricity between the stationary wire T and a speeding train, to which latter the said truck is designed to be attached. Fig. 10 is a side view of a portion of a car, T G, showing the relative arrangement of the transmitting-brush V and traveling wires T with the stationary wire T, truck R, and speeding car T G. Fig. 11 is a similar view of the truck R and car T G.

Similar letters of reference indicate corresponding parts in the several figures of the drawings.

My invention (of this application) consists, first, in mounting the guides W upon suitable supports, so that the bottoms of the said guides will be in line with the tops of the rails S; second, in securing the said guide W to the said rail S and tie X; third, in the construction and arrangement of the guides W, so as to form a track for the wheels M' of the telegraph-truck R, and adapting the latter to operate upon the said guides W for its track; fourth, in the construction and arrangement of the guiding mechanism, so that the contact of the wheel M with the guide W will be in line with the tops of the rails S, where there is the least sliding friction; fifth, in adapting the guide W to use as a track and in connection with the common T-rail S without waste of

material or labor, the accomplishment of which has required a great deal of thought and labor in order to find the simplest effective means of securing that side of the T-rail S next to the guide W (and below the latter) to the cross-tie X without first removing the said guide W whenever the said rail S was to be removed and a new rail placed in its stead, for the reason that the said guide W, being over the place where the spike is usually driven into the tie X, would interfere with driving and withdrawing the spikes to fasten and release that side of the rail in the ordinary way; hence it was necessary to find other means than usually employed or than that shown in said patent No. 326,212 wherewith to secure the rail S to the cross-tie X, in connection with the elevated guide W before the common T-rail S could be employed in the most economical manner with the said guide W. The bracket L serves to support the guide W in its elevated position, to secure it to the tie X in a permanent manner independent of the T-rail S, so as to permit the removal and replacement of the latter without removing the said guide W, and also serves as the means whereby the flange of that side of the bottom of the said rail S next to the guide W is held down to the tie X, and to which the rail S is bolted for both vertical and lateral support. The bracket L is formed so that when the rail S is bolted to it and the other side of the rail is spiked down to the tie X the strength of the whole apparatus is combined for both the lateral and vertical support of the track-rail S and guide W, while the arrangement is such that by drawing the spikes out of the tie X from off the outside flange of the rail S, and unscrewing the nuts from the bolts *b*, (see Fig. 2,) the said rail S can be drawn out from under the lip of the said bracket L and removed and a new rail put in its place without disturbing the bracket L or guide W; also the tie X can be released from the bracket L and rail S by withdrawing the spikes *j* from the tie X, (see Figs. 2 and 5,) when the tie can be removed and replaced as usual. Several modifications of the same principle are shown in the drawings, which latter are sufficiently clear to be understood without further explanation.

This invention further utilizes the guides W for a track for a traveling telegraph-truck and for a means of support for a stationary telegraph-wire for use in connection with the traveling truck R, which latter is designed to be attached to and travel with the train.

Figs. 2, 3, 7, and 8 show transverse sectional views of the guide W, formed into a track for the telegraph-truck wheels M', part of which latter are shown (in position upon the guides W) in Figs. 2 and 8. A plan view of the said truck R and its track is shown in Fig. 9, and side views of the same are shown in Figs. 10 and 11.

The arrangement of the transmitting-brush V, its wheel V², and wire T are shown in Figs.

9, 10, and 11; but the operation of the telegraph system is not described herein, because it is not claimed in this application, it being subject-matter for a separate patent.

The truck R is so constructed that the wheels M' are supported and act independent of each other, and that one end of its frame, when connected with the end of the car T G, will be supported by the latter and carried upon its wheels M and rails S, leaving only the light weight of one end of the said truck R and its wheels M' and its telegraph apparatus resting upon and to be carried by the guides W. The advantages of thus employing the guides W for supporting and protecting a telegraph wire or wires and as a track whereon to operate the traveling truck, whereby the telegraph-wires are utilized in conveying messages to and from the speeding train, are as follows: First, the speeding train being in constant communication with all the stations of the railroad, any accident to the latter which would break the wire T would be known to every train and at every telegraph-station connected with the railroad instantly, and, moreover, the speeding train would be in constant communication with the telegraph-offices of the world by the same means, whereby the train is secured from danger of accidents from breaking of the roadway in advance of the train. These great advantages are rendered possible and practicable by means of the elevated track on the top of the elevated guide W and its corresponding truck, R, and truck-wheels M'.

The arrangement of the guides W is such that the wheels M of the locomotive and cars can only touch them at points in line with that part of their faces in contact with the top surface of the track-rails S, where there is least friction, hence attaining the minimum of friction in the necessary function of guiding the train instead of the flanges on the rims of the wheels.

"Increase of speed with increased safety" being the object of the invention patented in said Letters Patent No. 326,212, upon which this invention is an improvement, the specification of the said patent is referred to for a description of the advantages of the elevated guides W for guiding wheels of greater diameter than ordinary. I do not claim anything in this application which is claimed and patented in my said former patent, nor anything ever before known or used.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a railroad wherein the wheels M of the train are guided in their course and secured from derailment by elevated guide-rails W, (such as described in my said Patent No. 326,212, dated September 15, 1885,) in combination with the guides W, rails S, and cross-tie X, the bracket L, constructed and arranged in the manner and for the purposes substantially as set forth.

2. In the above-described railway, the com-

5 bination, with the rails S, guides W, car T G,
wires T, wheels M' and V², of truck R and
brush V, the track W upon the tops of the
guides W, upon which the truck R operates,
arranged to operate together in the manner
and for the purposes substantially as described
and illustrated.

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

WILLIAM FARR GOODWIN.

Witnesses:

S. A. TERRY,
B. C. FENWICK.