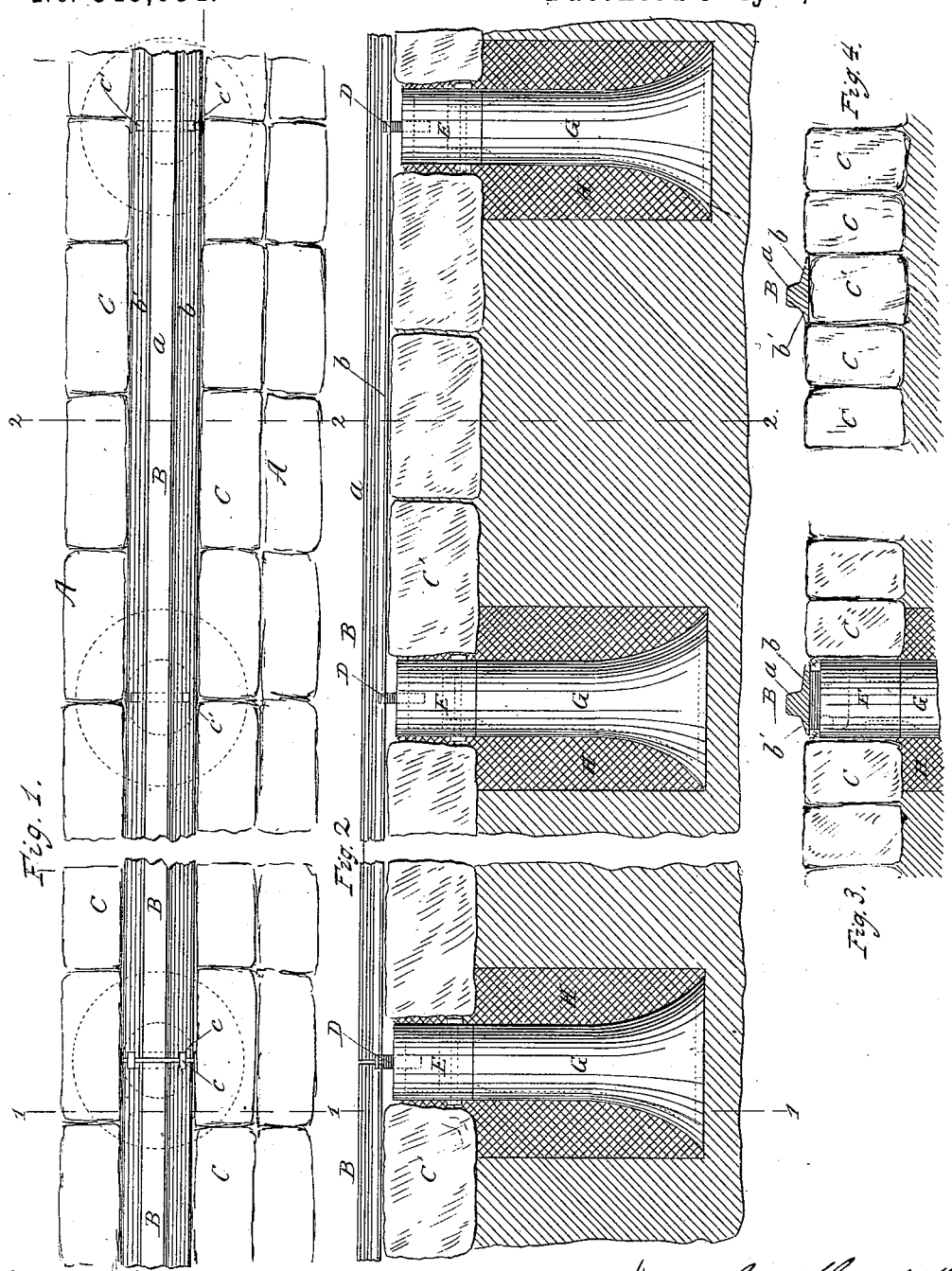
(No Model.) 2 Sheets—Sheet 1.

S. HYMAN.

RAILWAY TRACK.

No. 345,054. Patented July 6, 1886.



Witnesses:
Geo. W. Kirchner.
Kurtzman & Macfee

Inventor.
Samuel Hyman

N. PETERS. Photo-Lithographer, Washington, D. C.

(No Model.) 2 Sheets—Sheet 2.

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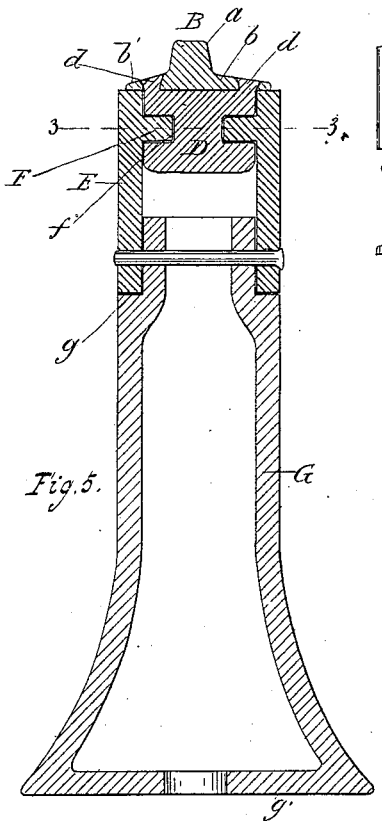

Fig. 5.

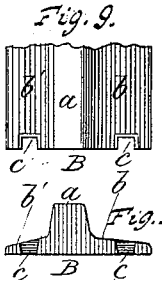

Fig. 9.

Fig. 10.

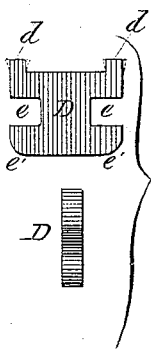

Fig. 11.

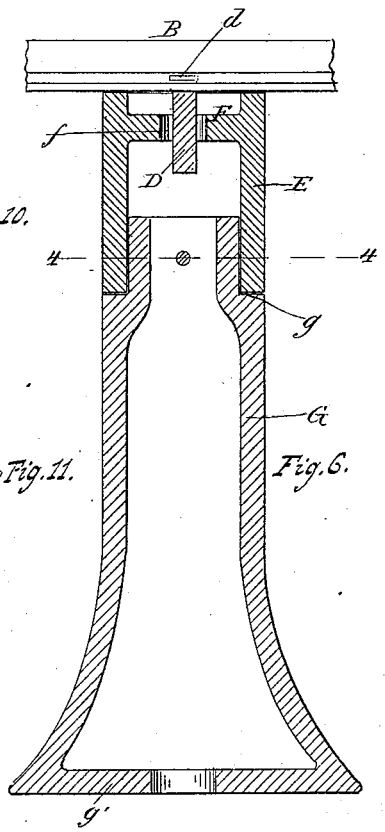

Fig. 6.

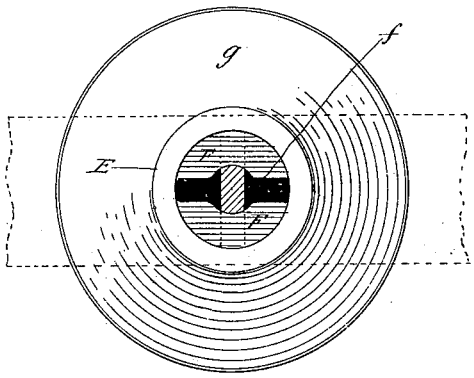

Fig. 7.

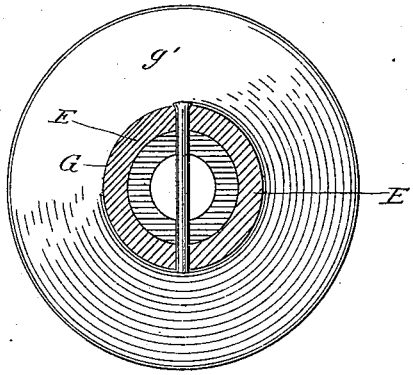

Fig. 8.

Geo. W. Kirchner.
Kutzenff & Macfee
Witnesses:

Samel Hyman
Inventor.

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

SAMUEL HYMAN, OF EAST ALBANY, ASSIGNOR OF THREE-FOURTHS TO JAMES W. EATON AND CHARLES WETHERWAX, BOTH OF ALBANY, N. Y.

RAILWAY-TRACK.

SPECIFICATION forming part of Letters Patent No. 345,054, dated July 6, 1886.

Application filed December 30, 1885. Serial No. 187,167. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL HYMAN, a citizen of the United States, residing at East Albany, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in the Construction of Railway-Tracks, of which the following is a description.

My invention relates to the construction of railroad or way beds and tracks in which the rails, short anchor-columns, coupling devices, and adjuncts to said rails and columns, together with tamped pockets beneath the rails, and the paving stones or blocks co-operate to produce a permanent railway bed and track, all of which I will hereinafter fully and particularly describe; and my invention consists of the parts, devices, and elements, and the combination and arrangement of the same, hereinafter described, and specifically set forth in the claims.

The object of my invention is primarily to dispense with the usual track-ties and rail-sills and their adjuncts, to obviate the cost and expense generally attending the digging and filling of roadways and laying tie-timbers and rail-sills, and by means of a series of anchor-columns, tamped pockets in the road-bed coupling devices, and adjunts to the rails, as will be described, to produce a permanent railway-track and be enabled to maintain the same in good condition for traffic at less expense than heretofore with the old modes of construction; and, secondarily, to provide specific means by which my said improvements can be put into practice in a serviceable yet economical manner. I attain these objects by means illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a plan view of a section of a track of a railway constructed in accordance with my invention. Fig. 2 is a sectional elevation of the same. Fig. 3 is a transverse sectional view taken on the line 1 1, Figs. 1 and 2. Fig. 4 is a view taken on the line 2 2 in Figs. 1 and 2. Fig. 5 is a cross-sectional view of the rail-coupling devices, anchor-column, &c., on an enlarged scale. Fig. 6 is a transverse section of the same. Fig. 7 is a section on the line 3 in Fig. 5. Fig. 8 is a section on the line 4 in Fig. 6. Fig. 9 is a plan view of the end portion of rail and illustrates the holding-notches in the same. Fig. 10 is an end view of the same. Fig. 11 illustrates the coupling-ear of rail.

The same letters of reference refer to like parts throughout the several views.

The drawings show only one rail-line of the railway-track; but as each parallel rail-line of this improved track is the same as the other, a description of one in all its parts, devices, adjuncts, and elements will suffice to give a full and clear understanding of my invention.

In the drawings, A represents the portion of the roadway neighboring one line of rails B of my improved railway-track.

C C are the usual paving stones or blocks adjacent to rails B. The rails can be made with any of the known forms of construction which will be best suited to be employed for the traffic the road is to sustain; but preference is given to the form shown in the drawings. These rails are made of the usual length and are set apart in parallel lines to the distance of track-gage measure employed, and the joints of these parallel lines of conjoined rails are preferably relatively broken, so that the joints of one of the lines of rails will be about opposite the middle of length of the rails of the other line, as is the general practice in the construction of railway-lines. Rail B is made up of the head or the trackway proper, *a*, on which the wheels of the cars run, the inside flange, *b*, on which the wheels of common road-wagons run, and flange *b'*. At each end of these rails B are made, in flange portions *b* and *b'*, notches *c c*, which are made of a suitable form for engaging with dovetail-like securing devices. These notches are shown in Figs. 9 and 10.

D D are locking-ears, having secure and permanent attachment with rails B at intervals of from thirty to forty inches apart, as the traffic of the road may require. These ears are preferably made of Bessemer steel or other good and strong quality of metal, and of the form substantially as shown in Figs. 5 and 11, and are provided with stems *d d* integral therewith and corresponding with perforations *c' c'* made in flanges *b b'* of the rails. These lock-

ing-ears are secured to the rail on its lower side, the stems *d d* being passed through perforations *c' c'* and securely riveted thereto, as shown in Fig. 5. The locking devices in these locking ears D are the notches *e e* and holding-lips *e' e'*.

With each locking-ear D is employed a coupling-sleeve, E. This coupling-sleeve is made of any suitable metal, and has provided within its upper end portion the holding-head F, in which is made the horizontal cross-slot *f*, which slot is made of a form adapted to receive the body of the locking-ear D and permit its being turned a quarter of a circle, the metal of the head F working in the notches *e e* of the ear D, and holding with the lips *e' e'* of the same, as illustrated by full and dotted lines in Fig. 7. The lower portion of the body of this coupling-sleeve E is made to correspond with the shouldered neck of column G, as shown in Figs. 5, 6, and 8.

G G are columns made of cast metal, with a length of from twelve to sixteen inches from base to shoulder *g*. These columns are preferably made hollow and have a flaring base, *g'*. These columns are employed in numbers corresponding with the number of the locking-ears D attached to the rail, and are sunk in the ground at corresponding distances apart and secured by tamping sand or equivalent holding tamping material H all around, as illustrated in Fig. 2.

In arranging and placing the several parts and devices entering into my invention, I prefer to proceed in about the following order of operation with those parts: The lines of the two parallel rail-lines of the proposed track will be determined and laid out and marked in the manner generally practiced. On these parallel lines, and at intervals of from thirty to forty inches apart from centers, (or such other distance as locking-ears D D, attached to the rails, are apart,) are sunk a series of holes, preferably by means of a post-augur, for receiving columns G. These holes are sunk to a depth sufficient to bring the upper surface of the rails B B on the required plane or grade above the surface of the street. Commencing with a column at the point of beginning of the first rail, the first hole will be dug to the required depth and the column fixed in position. The other holes will then be dug in the line and of proper depth, each as required, and a column fixed in each. Coupling-sleeves E will then be connected with locking-ears D by bringing the cross-slot *f* of each holding-head F of said sleeves in position to receive the notched locking-ears D when the coupling-sleeves will be each turned a quarter round, so that the slot *f* in the sleeve E will stand relatively in the same line as the rail, while the holding-lips *e' e'* and the notched portions *e e* will be relatively transverse to said slot *f*, as shown in Fig. 7. A thick locking-ear (or two of them) is dropped into the slot *f* of the first set coupling-piece and turned to position shown by dotted lines in Fig. 7, when the dovetailed stems *d d* will be entered into the end notches, *c c*, of the rail. The lower ends of coupling-sleeves in their attached condition with the locking-ear D will be then placed on the shouldered neck *g g* of the columns G G, when the said sleeves will be pinned in place with the respective columns. The line of rails so secured will then be lined in a proper manner and beveled up, when the holes H will be filled with sand or other suitable tamping material around the columns G, which sand or other material will be properly tamped to give proper support to each column and hold the same in proper position for maintaining the rails in line. It should be understood that a row of paving stones or blocks, C, which fall directly beneath the rails, are between the rails, and are rammed down to a plane-line which will correspond with the line of the lower surface of the rails. When the columns have been fixed in position required for lining and leveling the rails, the several columns will be tightly packed and tamped with sand all around, while the row of stones C' below the rail will also be rammed up with sand, to bring the tops of the said stones to bear against the lower side of the said rails. The adjacent stones C C' are then set and rammed, so that their upper surfaces will be brought to the plane of the upper surface of the flange *b* of the rail. Both lines of rails are set and secured substantially in the same manner, and each end of each rail will engage with one thick or two thin locking-ears from one side, while the adjoining end of the neighboring rail will engage with the same ears from the other side, so that while the adjoining ends of two rails are brought together end to end, as shown in Fig. 1, the one single thick ear or two thinner ones engaging with the same locking or coupling sleeve E, will be securely held by the dovetail stems *d d*, engaging with the dovetail notches *c c* made in the ends of said rails.

Having described my invention, what I claim is—

1. In the construction of railway-tracks, the rails B B, provided with locking-ears D, and held in line and place by coacting coupling-sleeves, and the anchor supports or columns G, applied and secured, all substantially as and for the purposes set forth.

2. In the construction of railway-tracks, the rails B B, having partial support on the row of stones C beneath the same, and on columns G G, secured by coupling devices to said rails and set in the ground vertically below said rails and secured from being moved by the sand filling and tamping, substantially as and for the purposes set forth.

3. In the construction of railway-tracks, the rails B, having partial support on row of stones C', and a partial holding from side movement by stones C, and having secure attachment by means of ears D, of coupling-sleeves E, with the anchor supports or columns G G,

secured within sand packed and tamped holes H, substantially as and for the purposes set forth.

4. In railway-tracks, the combination, with holding-notches *c c*, made in the end of the rail, coupling-ears D, provided with dovetail holding-stems *d d*, and holding-lips *e'*, of the coupling-sleeve E, provided with devices engaging with lips *e'* of the locking ends, and columns G, engaging with said coupling-sleeve, substantially as and for the purposes set forth.

5. In railway-tracks, the connection between the rail B and the anchor supports or columns G, above described, the same consisting of the locking-ears D, secured at intervals to the rails, and the coupling-sleeves E, which are interlocked at will with said locking-ears, and with said supports or columns, substantially as and for the purposes set forth.

SAMUEL HYMAN.

Witnesses:
GEO. W. KIRCHWEY,
KARTUSOFF N. MACFEE.