(No Model.) 2 Sheets—Sheet 1.

H. L. FERRIS.

HAY CARRIER TRACK.

No. 460,959. Patented Oct. 13, 1891.

Fig. 1.

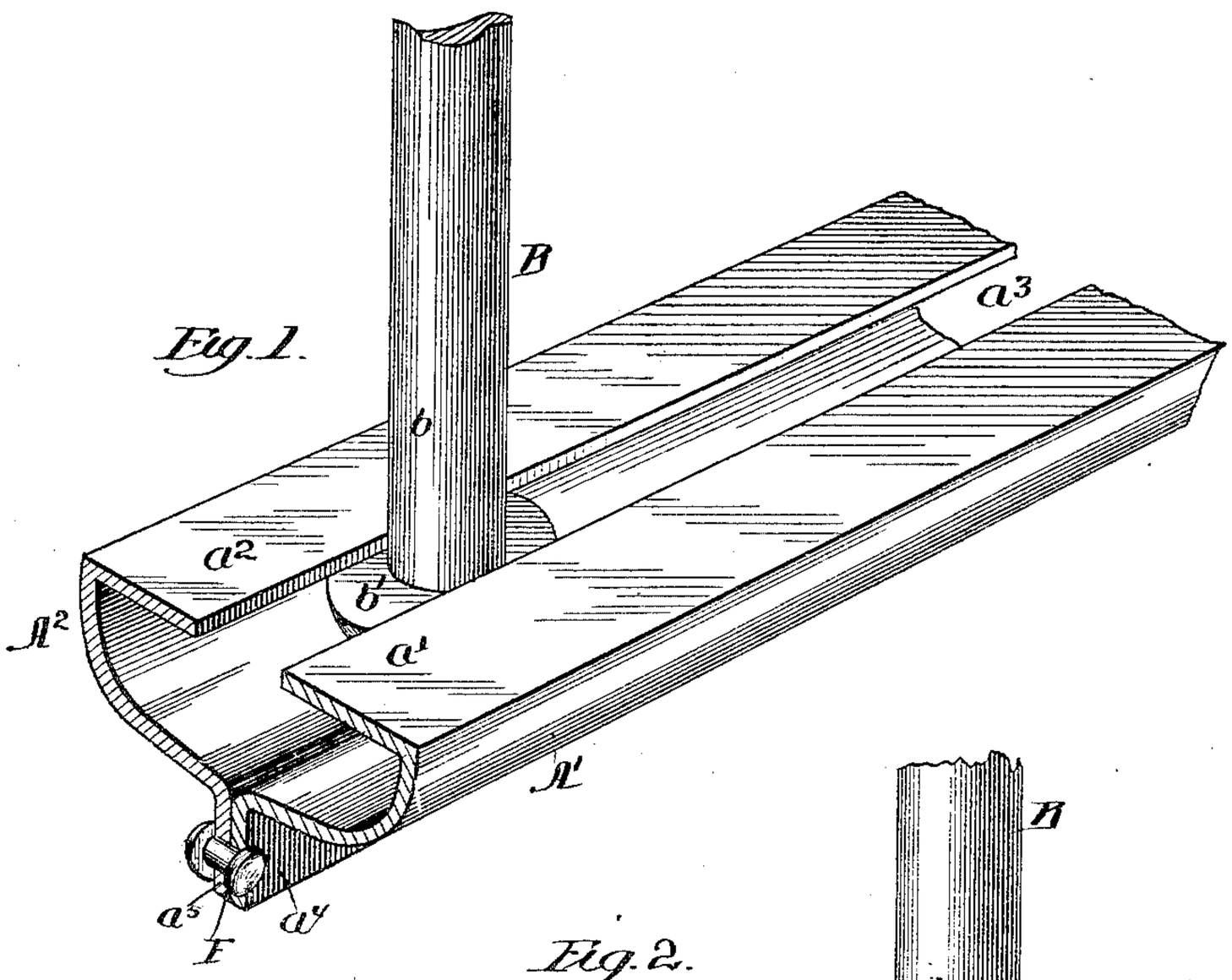


Fig. 2.

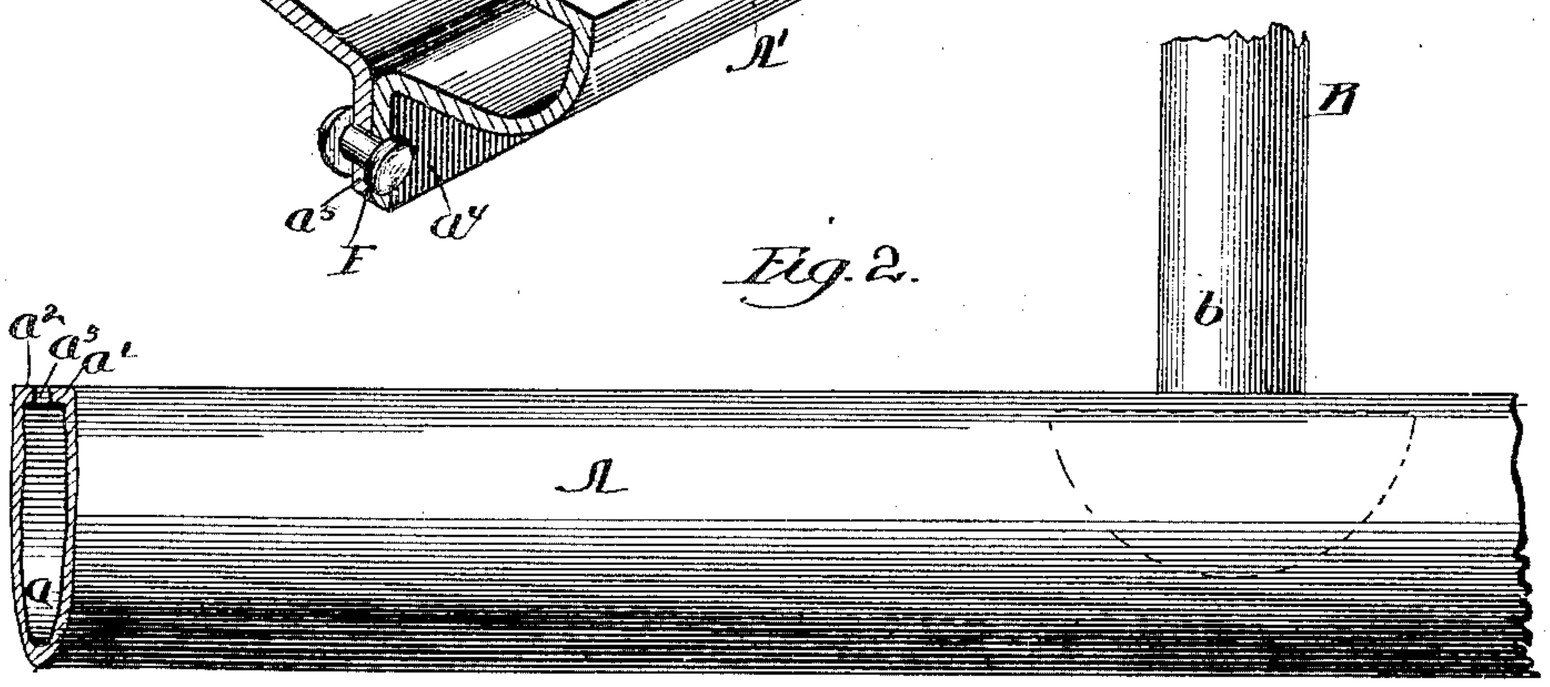


Fig. 3.

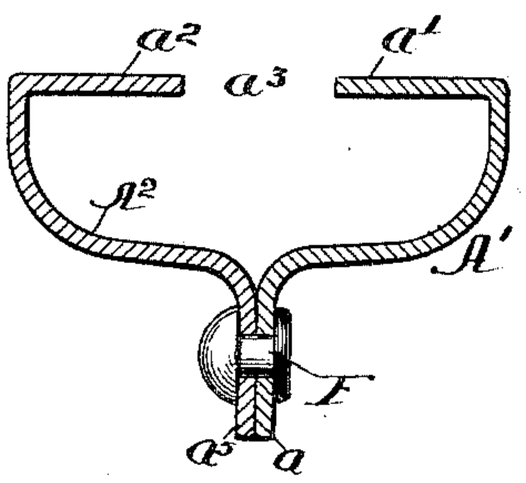
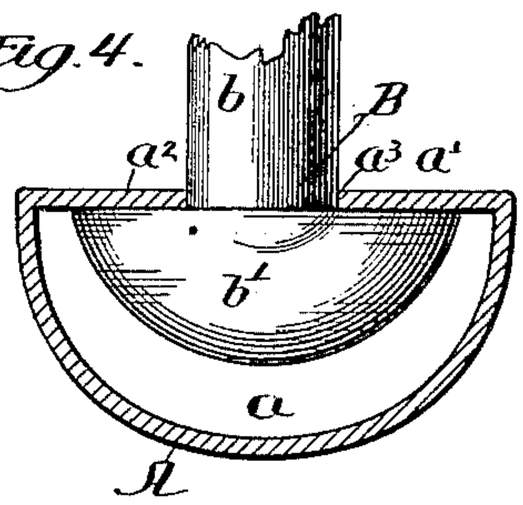


Fig. 4.



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(No Model.) 2 Sheets—Sheet 2.

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HAY CARRIER TRACK.

No. 460,959. Patented Oct. 13, 1891.

Fig. 5.

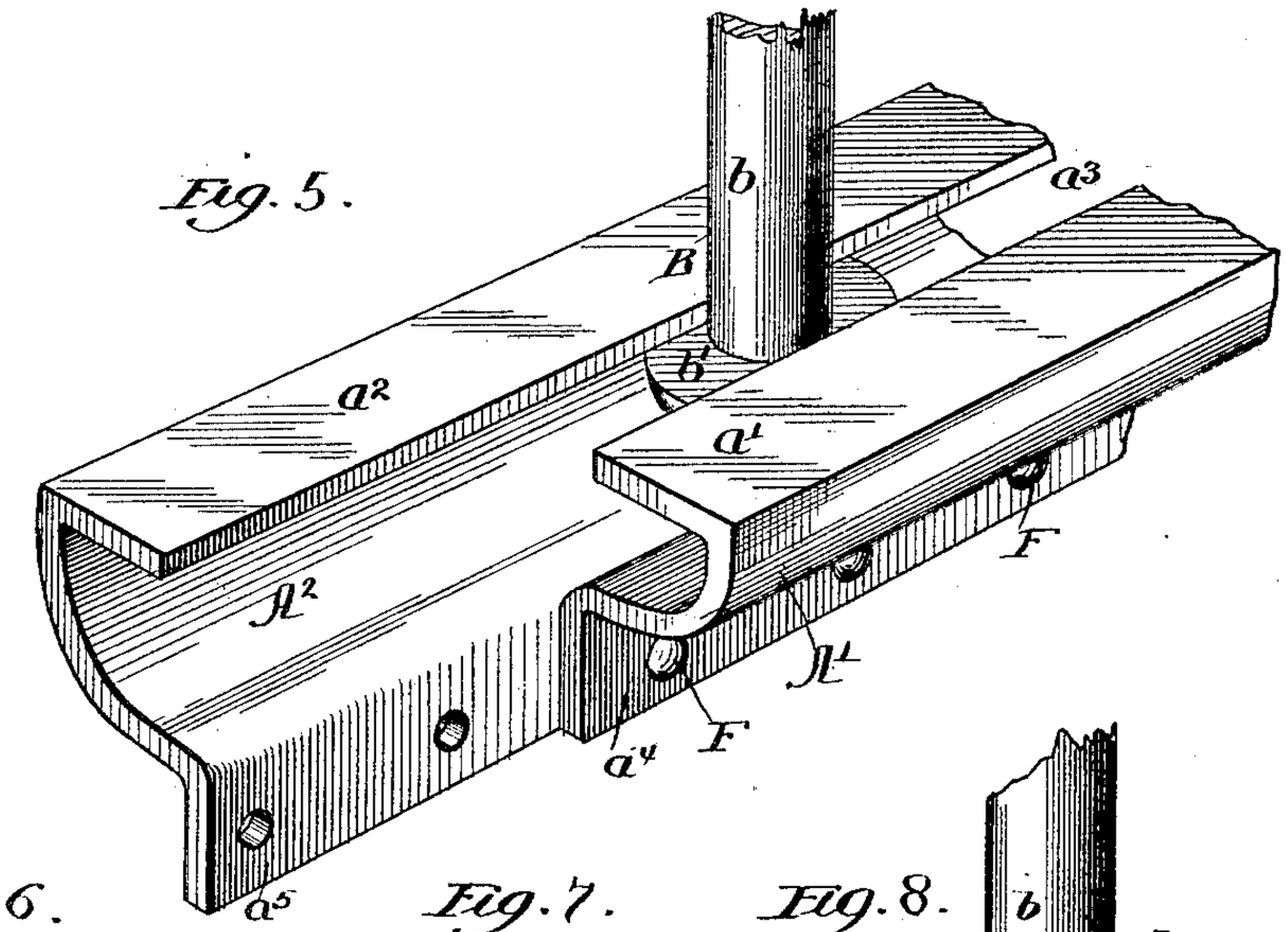


Fig. 6.

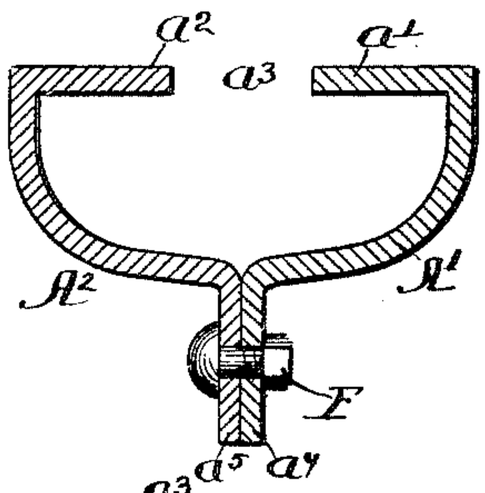


Fig. 7.

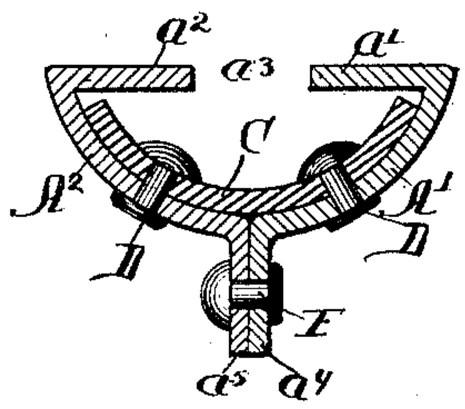


Fig. 8.

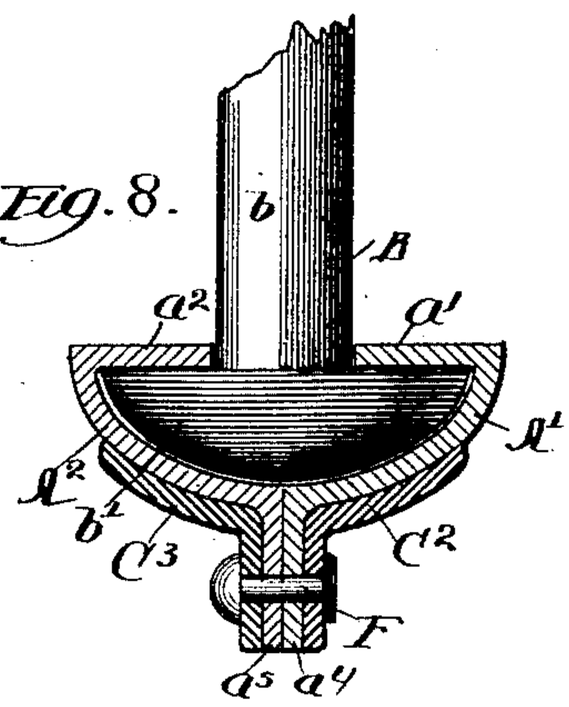


Fig. 11.

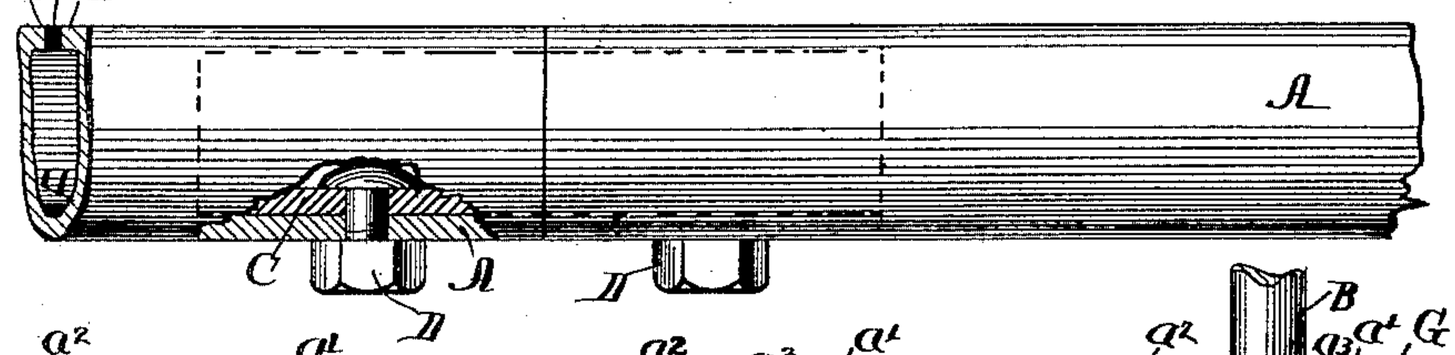


Fig. 9.

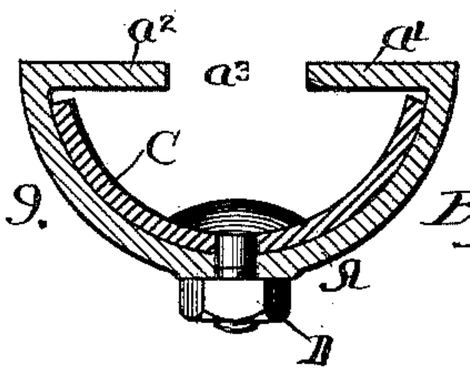


Fig. 10.

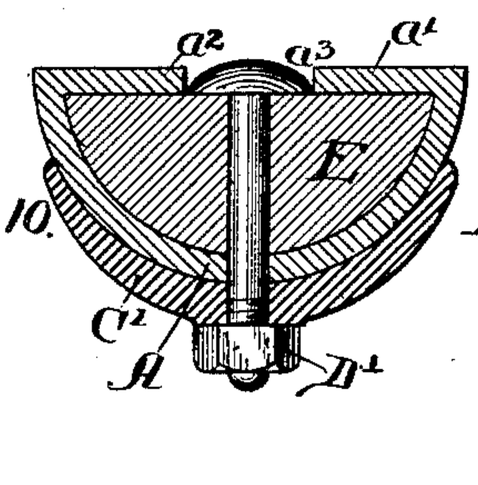
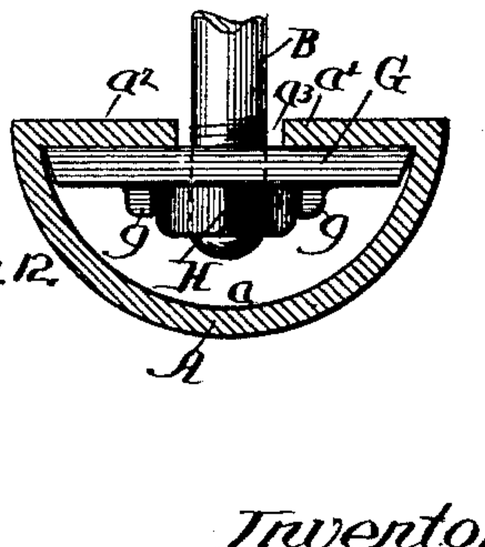


Fig. 12.



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UNITED STATES PATENT OFFICE.

HENRY L. FERRIS, OF HARVARD, ILLINOIS.

HAY-CARRIER TRACK.

SPECIFICATION forming part of Letters Patent No. 460,959, dated October 13, 1891.

Application filed May 29, 1891. Serial No. 394,461. (No model.)

To all whom it may concern:

Be it known that I, HENRY L. FERRIS, a citizen of the United States of America, residing at Harvard, in the county of McHenry and State of Illinois, have invented certain new and useful Improvements in Metal Tracks for Hay-Carriers, of which the following is a specification.

My invention relates to certain improvements designed to produce a strong, light, simple, and easily-handled metal track. The most suitable metal in use at present for this purpose is steel, and as the cost of the same is considerable any saving of material makes considerable difference in the cost of the track. It also makes it easier to handle and much neater in appearance when in use.

With the above end in view I have endeavored to discover the best shape into which the metal may be put to perform all the necessary functions of a hay-carrier track. A track of this sort must be provided with means for suspending it from the rafters or other timbers of a barn or shed and must bear a double tread to receive the four-wheeled carriers now in common use. The most convenient way of supporting the track is by means of hangers engaging therewith between the two treads on the opposite sides. These hangers should be able to slide longitudinally of the track, so that they may be brought into any necessary position to reach the timbers from which they are suspended. It is no easy matter, for these reasons, to devise a form for a metal track which shall be at once light, cheap, and strong. Various shapes have been used, among which are what are known as "T-rails;" also, two pieces of channel-iron have been fastened together by blocks, and various other efforts have been made to utilize some of the common forms of iron or steel upon the market. I wish to furnish a track which shall be of the necessary strength, and yet shall be lighter, cheaper, and more graceful than any of the forms heretofore used. For this purpose I form a suitable metal, as steel, into a substantially U shape, with the convex portion downward and the edges turned inward toward each other, to form horizontal flanges, between which barely sufficient room is left to receive bolts or rods, upon which the track is hung. The steel may be rolled at once into the desired shape, if preferred; but I believe it to be cheaper to purchase it in the form of a flat band and to bend it into the required shape.

Looking now at the drawings furnished herewith, where the best proportions are illustrated, a perspective view of a portion of track will be seen in Figure 1, a side view in Fig. 2, a cross-section of Fig. 1 in Fig. 3, a similar section of Fig. 2 in Fig. 4, another perspective of one end of a piece of track in Fig. 5, illustrating the method of uniting the different pieces, a cross-section of one of the joints in Fig. 6, similar cross-sections of modified forms of joints in Figs. 7, 8, 9, and 10, a broken side view of the form seen in Figs. 9 and 11, and a cross-section of a modified form of hanger in Fig. 12.

The simplest form in which my invention can be placed is seen in Figs. 2 and 4, where the entire track is formed of a single solid band of steel A, bent to form the downwardly-convex portion a and the inturned flat horizontal flanges a' a^2. With this track is seen a bolt B, having a shank b small enough to slide back and forth in the slot a^3 between the inturned flanges, and a head b' too large to be pulled through said slot. The shank of the bolt extends upward and is provided with any convenient means of connection with the supporting-timbers. Three different ways of uniting the different sections of tracks of this form are shown in Figs. 9 and 10, the sections being square at the edge, abutted against each other, and connecting-plates C or C′, fitted to the convex portion of the track and tightly clamped thereto by bolts D D′. The plate C is shown inside of the track and the plate C′ outside of it. In connection with the plate C′ a solid block E is shown, entirely filling the inside of the track. It is obvious that in place of this solid block the concavo-convex band C could be used. The solid block has the advantage of bearing upon the horizontal flanges as well as the convex portion of the track, and hence making the joint stiffer, while the block itself is obviously stronger. On the other hand, the band C does not interfere with the sliding of the bolt-heads B back and forth from end to end of the united track.

While the form above described is un-

doubtedly the simplest, yet I have shown a form in Figs. 1, 3, 5, 6, 7, and 8 which I prefer for three reasons: first, it is easier to make; second, it affords an easier connection at the joints, and, third, it is stronger than the form shown in Fig. 4. The track shown in these figures is made up of two strips of metal A′ A², bent so as to each form substantially one-half of the track shown in Fig. 2, and these two strips are each provided with downwardly-bent vertical flanges a^4 a^5, firmly united by means of rivets or bolts F to join them into a substantially solid track. This form is more easily rolled or bent than the one shown in the remaining figures, and the united vertical flanges stiffen it considerably against downward strain from the load. The ease with which the different sections are joined is shown in Figs. 5 and 6, which illustrate how a very satisfactory joint can be made by simply allowing one side of the track to extend beyond the other at each end of each section and clamping the projecting portions together by means of bolt F′, applied to the downwardly-hanging flanges of the convex portions. If it is found necessary to strengthen this joint, the same can be done as shown in either Fig. 7 or 9, where C is a band fitted to the interior of the convex portion of the rail and secured thereto by bolts D, and C² C³ are plates fitted to the outside of the same portion, and also to the depending flanges.

Fig. 12 illustrates an improvement in the hanger which supports the track. It is not easy to procure headed rods or bolts of the size desired, and besides it is frequently desirable to have the hanger vertically adjustable to a certain extent. To enable common iron or steel rods to be used, I have provided a washer G, large enough to support the flanges a' a^2, and having itself downwardly-projecting lugs g, which may be continuous, if desired, to form a socket adapted to receive a nut H, threaded to the rod, and to prevent said nut from turning when the rod is turned. The washer itself is preferably made large enough to fit tightly within the rail and with squared sides to prevent its turning in the same.

I do not intend to limit myself to any particular one of the forms described nor to any combination of all the different improvements, except as pointed out in the claims appended hereto, in which I closely define those features which I believe to be novel.

It is obvious that various modifications are possible in all of my different improvements, especially in mere matters of form. Thus while I prefer to make the portion of the track which unites the horizontal flanges a' a^2 downwardly convex, it will readily be seen that this shape can be varied without departing from my invention. Thus it might be made V-shaped or square without any considerable effect upon the track, except perhaps waste of material, greater difficulty of construction, or loss of strength. Again, the nut H (shown in the last figure) is not essential, though preferable, as the hanger could be threaded directly in the washer.

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

1. A track having horizontal portions to form a double tread separated by a practically-continuous slot, and a depending portion uniting the outer edges of this tread, in combination with a hanger having a shank adapted to slide back and forth in the slot, and means applied to the end of the hanger to prevent it from being drawn through the same, substantially as described.

2. The combination, with a track composed of two strips arranged side by side, each formed with a horizontal tread, a vertical uniting flange, and a connecting portion between this flange and the outer edge of the tread, said uniting flanges being firmly secured together and said connecting portions being so shaped that when the same are united there shall be a practically-continuous slot between the inner edges of the treads, of a hanger having a shank adapted to slide back and forth in said slot, and means applied to the end of a hanger to prevent it from being drawn down through the same, substantially as described.

3. A track having horizontal portions to form a double tread separated by a practically-continuous slot, and a depending portion uniting the outer edges of this tread, in combination with a hanger having a shank adapted to slide back and forth in the slot, a non-rotatable washer upon the hanger within the track, and a nut threaded to the hanger beneath the washer, substantially as described.

HENRY L. FERRIS.

Witnesses:
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BART STEVENSON.