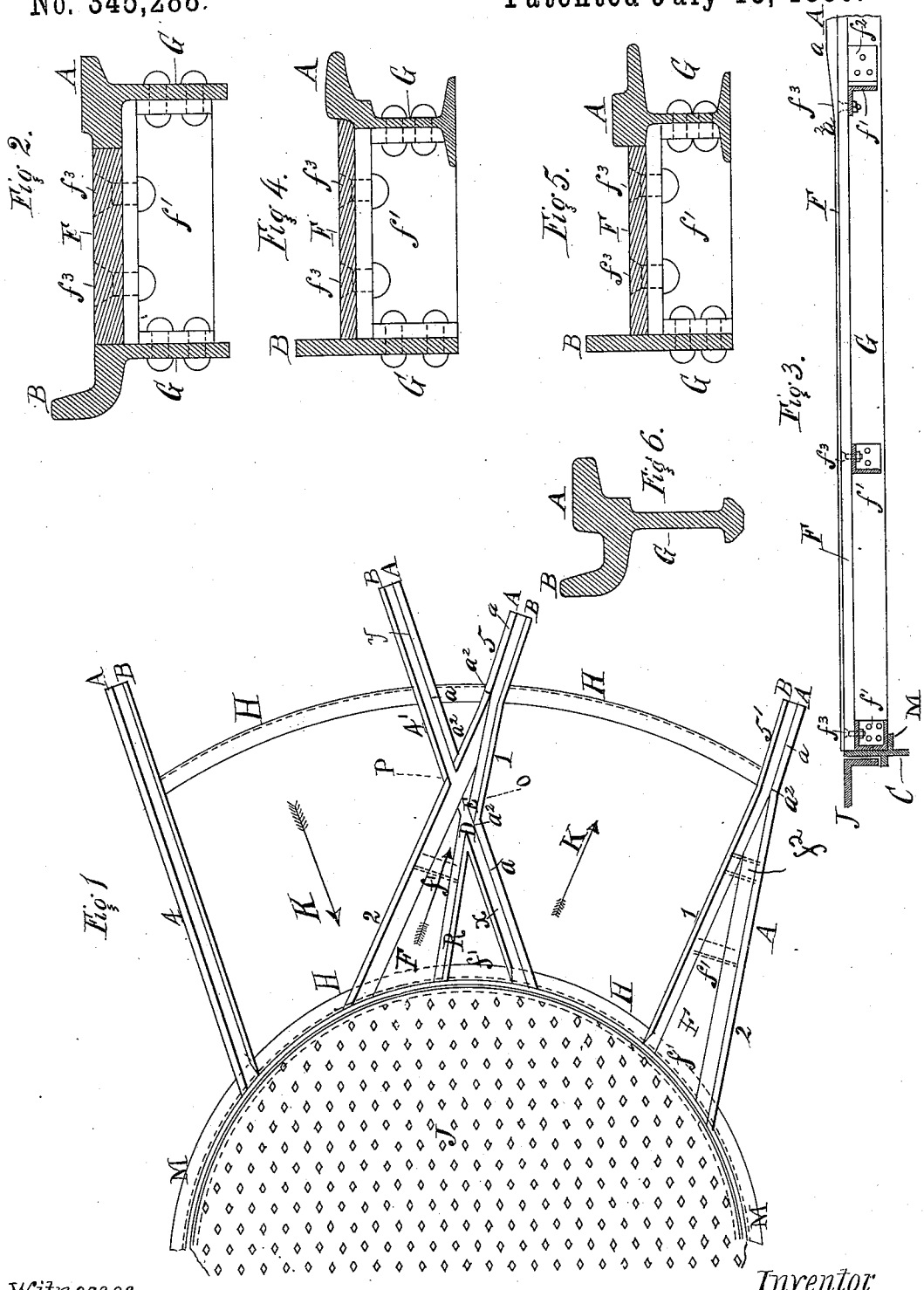
(No Model.)

A. V. DU PONT.

TURN TABLE GUIDE.

No. 345,288. Patented July 13, 1886.



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TURN-TABLE GUIDE.

SPECIFICATION forming part of Letters Patent No. 345,288, dated July 13, 1886.

Application filed April 9, 1886. Serial No. 198,349. (No model.)

To all whom it may concern:

Be it known that I, ALFRED V. DU PONT, of Louisville, in the county of Jefferson and State of Kentucky, have invented a new and useful Improvement in Turn-Table Guides, which improvement or invention is fully set forth and illustrated in the following specification and accompanying drawings.

The object of the invention is to make turn-table guides of such form and construction that rolled metal may be substituted for cast-iron, as commonly heretofore used, the many advantages flowing from such substitution being hereinafter particularly set forth. Said guides are composed, in the main, of two girder guard-rails fitted together at one end and divergent at the other end, the intervening space being filled with a steel plate.

In the accompanying drawings, Figure 1 shows in plan one incoming and one outgoing track of the guides forming the subject of this invention, respectively marked 4 4′ and 5 5′ in said figure. Fig. 2 shows a cross-section at the turn-table end of the guides, marked 5 5′ in Fig. 1. Fig. 3 shows a longitudinal section through the center of one of the plates, marked F in Fig. 1, situated, respectively, in guide 5 and guide 5′. Figs. 4 and 5 are modifications showing cross-sections of guides, in principle the same as those shown in Figs. 1 and 2, the guards in Figs. 4 and 5, however, being made of a plain bar, preferably of steel, set on edge, instead of being made of a guard-rail. The rail itself in Fig. 4 is a plain side bearing-rail and that in Fig. 5 a plain center bearing-rail. Fig. 6 shows a cross-section of the guard-rails, forming the guides shown in Figs. 1, 2, and 3.

In said figures the several parts are indicated by letters and numerals, as follows:

Referring to Figs. 1, 2, 3, and 6, A indicates the head of a girder guard-rail, B the guard of such rail, and G its web.

A portion of the turn-table frame is indicated by the letter C, and a part of the top or cover of the turn-table proper by the letter J.

The angle-pieces f' f' serve to connect the webs of the different parts where necessary, and serve also as supports to the plates F, preferably of steel, which are set in between the guide-rails and the turn-table, and whereon the flanges of the car-wheels run before the treads of the wheels take the heads of the rails as the car leaves the turn-table. At the points of said plates F chocks f^2, or angle-iron pieces, if preferred in the place of said chocks, are secured to the webs of the rails and to the plates F.

The angle-pieces f', the chocks f^2, the webs of the rails, and the floor-plates are all connected by means of rivets, countersunk, as at f^3, where exposed.

The letters H H indicate angle-irons connecting the guides and rails into one system for more rigid connection to the turn-table. Said angle-irons and the angle-pieces f' f', securely riveted to the structure as one system, may merely rest on a projecting ledge, M, cast on the frame C of the turn-table, as shown in Fig. 3, or said parts may be bolted or otherwise secured to the ledge M. The ends of the guides and rails which connect with the rest of the track are supported, like the track itself, upon cross-ties and may be similarly secured thereto. The open spaces K K, Fig. 1, between the guides and rails are preferably covered with corrugated or roughened cast-iron plates. (Not shown.) Cast-iron will answer for such purpose, as said plates sustain only the passing over them of the animals which draw the cars. The plates F, however, are preferably made of steel, as said plates must sustain the moving load of each car and the consequent friction and wear of its wheel-flanges, which wear tends of course to more or less rapid destruction of said plates.

The rail 4 in Fig. 1 is a simple girder guard-rail. (Shown in cross-section in Fig. 6.)

The guide 5′ in Fig. 1 is thus constructed. It is composed of two guard-rails or pieces of guard-rail, similar in section to the rail shown in cross-section in Fig. 6. One of said pieces, 1, is bent to the necessary angle at the point a^2, from which point its head A is entirely planed away; and said head A is also planed down from the point a at an angle, until at the point a^2 it is only three-eighths of an inch in height. The other piece, 2, of said guide 5′ has its guard B entirely planed off, and its head planed down its whole length to a height of three-eighths of an inch. The end of the piece 2, being then beveled at the desired angle, is abutted at a^2 against the exposed head

of the part 1, also three-eighths of an inch high at this point, and at the desired angle of junction, as shown in Fig. 1. The two rails or pieces 1 and 2, being thus set at a proper angle or inclination, are then connected by angle-pieces, as hereinbefore described.

The guide marked 5 in Fig. 1 is composed of two girder-guard rails like that shown in cross-section in Fig. 6. It divides and has joined to it the rail marked 4′, for which it provides a passage across itself for the wheel-flanges of the cars entering upon the turn-table. Said rails or pieces of rails are thus united: The guide 5 is in two pieces, (marked, respectively, 1 and 2,) and the rail 4′ in two pieces, (marked, respectively, x and y,) on each side of the guide 5. The two parts 1 and 2 of the guide 5 are fitted together, and secured in the same manner exactly as the parts 1 and 2 of the guide 5′, hereinbefore described, like parts being similarly lettered, and the head and guard parts A and B being similarly cut and shaped. The head A is only about three-eighths of an inch in height above the level of the turn-table until the point a^2 is reached, when there is a gradual ascent to the full height of head—say about one inch—at the point a, the guard B being about one and three-eighths in height. The two parts x and y of the rail 4′ are rigidly connected to the guide 5 in a straight line, at the proper angle therewith, by means of their webs, either directly by angle-braces or by bending the webs against each other and riveting them together. The head of the piece y is planed down from its regular height (about one inch) at a to three-eighths of an inch at a^2, which brings its point of contact a^2 to the same height as that part of the guide 5 with which the point a^2 makes such contact. The head A and guard B of the guide 5 are each opposite said contact, with the rail 4′ cut across or grooved down to correspond with the crossing-groove of the parts x and y of the rail 4′, at the same angle and of equal depth therewith, and all of the same level with the floor-plate F. The head of the piece x is also planed down an equal distance from a to a^2, similarly to the planing down of the head A of the part y, above described.

The guard B of the guide 5 may, if desired, be cut through wide enough at its contact with the piece x of the rail 4′ to permit of the whole end or entire width of material at said end of the piece x to intersect said guard B.

It will be observed that the part R of the guard B of the guide 5 nearest to the turn-table is set inward, and out of line with the part 1 of the said guard on the other side of the rail x, so that the point D is to the inner side of the point E. The object of such construction will be quite obvious from the following explanation: A car only leaves the turn-table through the guides 5′ and 5, leading to the track-rails. If such car take the guard of guide 5 before reaching the cross cut or groove made in said guide to permit of the passage therethrough of a car crossing on rails 4′ and 4 to enter on the turn-table, the leaving car on guides 5′ 5 will have the flanges of its wheels so deflected by the inset of said point D that before the car-wheels can come into contact with the guard again after leaving the point D said wheels will have passed by or beyond the opening made at the intersection of rail 4′, and thus the danger of said opening catching the wheel-flanges and throwing the car off the guides is neutralized or prevented.

The entering rail 4′ may be made in one piece, instead of in two pieces, as hereinbefore described, if preferred, and checked at its intersection with the guide 5—that is, all the intersecting webs of the rails may be cut half through at their intersections—say the lower half of the guide-rail webs and the upper half of the entering or crossing rail webs—and then fitted together; or the sides or parts of said guide 5 and of its crossing-rail 4′ (marked, respectively, O and P in Fig. 1) may be made of one rail each, which would leave the piece R an independent piece of rail to be joined either to said other two parts, O and P, or to the other two parts, 1 and 2, of guide 5, Fig. 1. The course of the crossing car in entering the turn-table upon the rails 4′ 4 is now quite obvious. At the point a on the part y the car-wheels commence to run off or down the incline of the head A of the rail, and by the time said wheels reach the guide 5 at a^2 they get their bearings on their flanges, which take the floor of the groove. Said flanges then pass through the head of the guide 5, in the groove made therethrough for this purpose, and the wheels run across or near the end of the plate F (still bearing on their flanges) until over the low part of the head of the piece x at a^2, from which point onward the treads of the wheels begin to bear upon the head A of the part x, and the wheels ascend the rise from a^2 to a, lifting their flanges from the bottom of the groove. The car, continuing on, enters upon the turn-table after leaving the rails, and as the said table is devoid of rails the car rests thereon upon its wheel-flanges. The car being thus on the turn-table, after its reversal by the turning of the table, leaves it in the following manner: On leaving the turn-table the car-wheels may enter the guides 5 5′ at any point between the guards and heads of said guides, depending upon the angle at which the car is started. Pulled at such angle it reaches one of the guards, when the wheels are by such guard forced into true line of track by the time the wheels reach the narrow ends of the guides. The plate F or flooring of the guides is laid level with the surface of the turn-table, and the ends of the guides and rails where they join the turn-table are beveled off, so that they may not catch upon a protruding wheel, and thereby prevent the turning of the table with the car upon it.

The object of the modifications shown in Figs. 4 and 5, the former illustrating the use

of a side-bearing girder-rail and a simple bar for a web-guard, and the latter a center-bearing girder-rail with a similar bar for a guard, will now be explained. On all curve-tracks a guard-rail of some sort is a necessity. On straight tracks a guard-rail is not used. In practice, therefore, the jointing of rails of odd and dissimilar cross-sections is a source of much trouble and inconvenience. It is not only difficult to make a perfect fit of parts, owing to offsets and special shaping required to be made in the splice-bars used, but the fact that there may be but few of such joints (generally resulting in having no spare joints ready when needed for use) only aggravates the trouble and inconvenience, unless special care is taken to provide for wear and breakage of such few joints, for if provision for such contingency be not made in advance the whole of a system may be practically incomplete, and so held for much time for the want of but a few joints. Street-railway companies are seldom provided with facilities for doing such work in emergencies where special devices require to be cut, forged, or cast; but by means of the modifications illustrated in Figs. 4 and 5 an entire track system can be maintained uniform and complete in all its parts, for, where the turn-table guides are intended to connect with the straight portions of the track, in which plain girder-rails are used, said guides are made of the same type of rail, whereas the turn-table guides which connect with curves or switches, wherein the guard-rail is a necessity, are made, as shown, out of such guard-rails. By this means one type of joint which is in general use in the system, and of which it is always customary to keep a sufficient stock on hand, is the only type of joint used.

While the guides herein shown have been described as particularly applicable to turn-tables, it is obvious they will answer equally well for draw-bridges, connecting tracks, or in all cases where guides for similar purposes are demanded.

Having thus fully described my said improvement in turn-table guides as of my invention, I claim—

1. A turn-table guide for the wheels of railway-cars, composed of a girder-rail on one side and a girder-guard on the other side, set to converge away from the turn-table, and braced and connected together through their webs, the convergent space between said rail-guard and table being filled by a floor-plate, substantially as and for the purposes set forth.

2. A turn-table guide for the wheels of railway-cars, in combination with a crossing rail or rails for cars approaching the turn-table, said guide and approaching rail or rails being braced and connected together through vertical webs, and provided with a guard having an offset-opening, whereby the wheels of the leaving car clear the opening made for the wheels of the crossing car, substantially as and for the purposes set forth.

3. In combination with a railway turn-table, a series of departing guide-pieces and approaching rails provided with vertical webs, and connected into one system by bracings riveted or bolted to said webs, whereby the cars approach and are received upon the turn-table upon one rail-track, and depart from the turn-table between guides convergent therefrom, substantially as and for the purposes set forth.

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