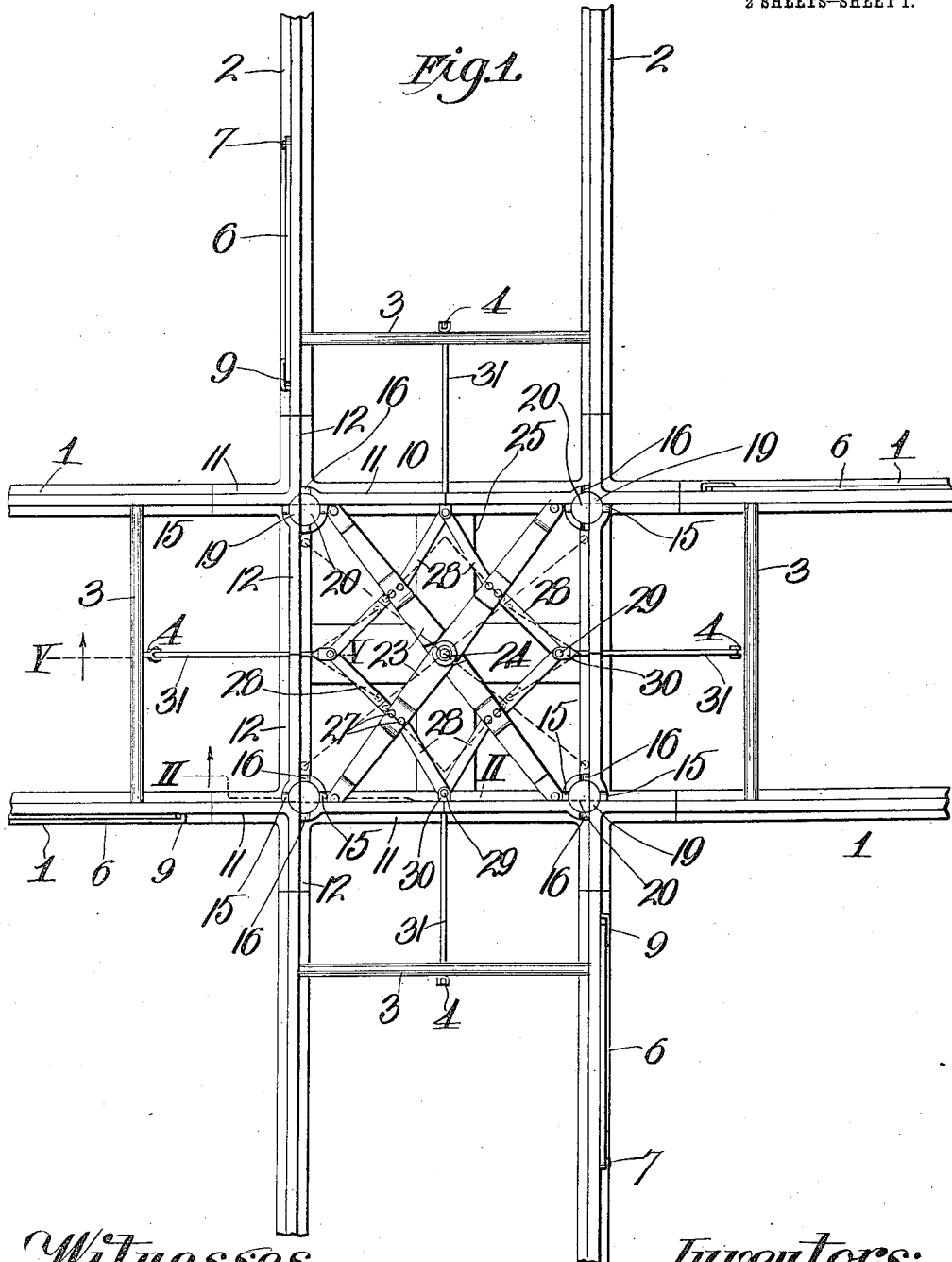


J. N. HALL & A. A. HODGSON.
RAILROAD-CROSSING.
APPLICATION FILED FEB. 21, 1911.

1,045,838.

Patented Dec. 3, 1912.
2 SHEETS-SHEET 1.



Witnesses
Frank R. Horn
H. C. Rodgers.

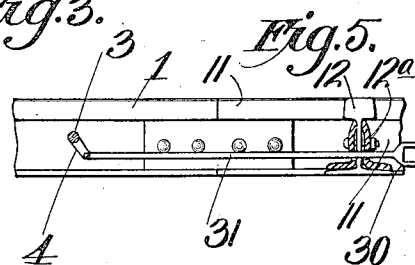
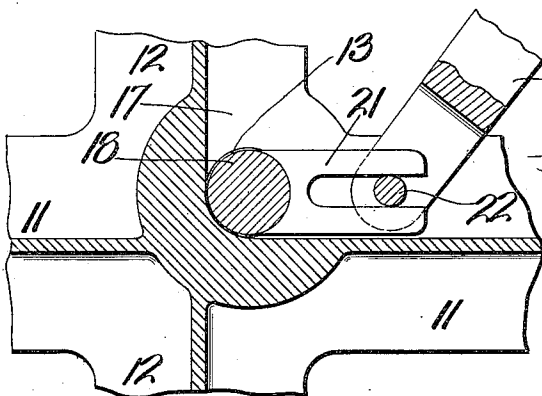
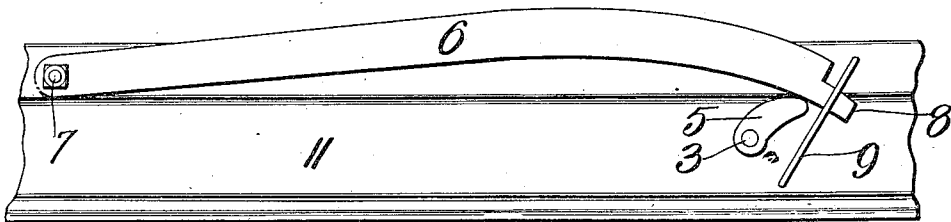
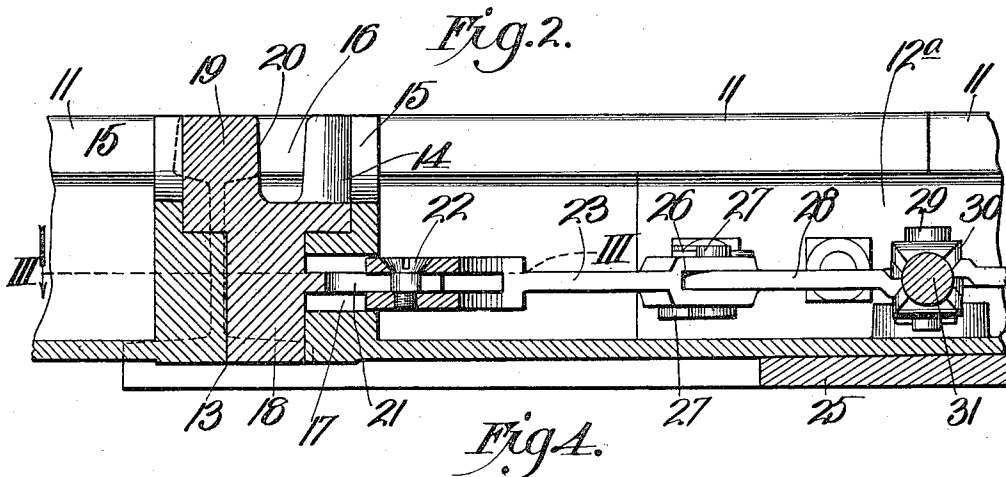
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J. N. Hall & A. A. Hodgson,

By George P. Thompson Atty.

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UNITED STATES PATENT OFFICE.

JOHN N. HALL AND ARTHUR A. HODGSON, OF KANSAS CITY, MISSOURI.

RAILROAD-CROSSING.

1,045,838.

Specification of Letters Patent.

Patented Dec. 3, 1912.

Application filed February 21, 1911. Serial No. 610,034.

To all whom it may concern:

Be it known that we, JOHN N. HALL and ARTHUR A. HODGSON, citizens of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Railroad-Crossings, of which the following is a specification.

This invention relates to railway crossings and our object is the production of a crossing which will offer an unbroken support for the wheels and thus eliminate the element of danger arising from the passage of a train over broken rails or from injury to the wheels of a train sustained by the pounding which occurs in the passage of a train over an ordinary crossing possessing no unbroken support for the wheels.

A further object is to reduce the cost of maintenance at crossings.

Another object is to produce a crossing provided with rotatable pins at the intersection points of cross rails, having recesses in their upper ends for the reception of the flanges of the wheels of passing trains, and means whereby a train approaching the crossing of either trackway shall rotatably adjust the said pins until the recesses of the same are alined with the flanges of the wheels of said train to permit the latter to pass over the crossing with no injurious shock or jar.

With these general objects in view and others as hereinafter appear, the invention consists in certain novel and peculiar features of construction and organization as hereinafter described and claimed; and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1, is a top plan view of a railway crossing embodying our invention. Fig. 2, is an enlarged vertical section on the line II—II of Fig. 1. Fig. 3, is a horizontal section on the line III—III of Fig. 2. Fig. 4, is a side view of a rail equipped with means forming a part of the invention. Fig. 5, is a section on the line V—V of Fig. 1.

In the said drawings, 1 and 2 indicate the rails of intersecting trackways and journaled in and connecting the rails of each trackway are rock shafts 3 provided with depending arms 4 midway between the rails and with crank arms 5, fitting against the

outer sides of the rails and projecting upwardly and toward the crossing.

6 are levers of any suitable length fitting flatly against the outer sides of the rails and pivoted thereto as at 7. At their free ends the levers preferably terminate in tongues 8, fitting within the keepers 9, which serve to limit the upward movement imparted to the levers by the underlying crank arms 5 and the downward movement of said crank arms.

10 indicates the crossing, the same preferably comprising cast-metal cross-shaped sections, each consisting of the alined arms 11 and alined arms 12. The first-named arms are arranged to constitute connections for the rails 1 at opposite sides of the crossing, and the arms 12 constitute connections for the rails 2 at opposite sides of the crossings, any suitable means, such as fish plates 12^a, being employed to secure the crossing sections in rigid relation to each other and to the rails, it being also understood that the crossing will be mounted upon a suitable underlying support, not shown.

Each cross-shaped section is provided with a vertical bearing opening 13 which for a depth exceeding that of the head or ball of the rails, is enlarged at 14, and the walls surrounding the enlarged portions 14 are provided with diametrically opposite grooves 15, and diametrically opposite grooves 16, the former being adapted to accommodate the flanges of the wheels running over the rails 1, and the grooves 16 the flanges of the wheels running over the track rails 2. Below the enlargement 14, each cross piece is provided with a recess 17, for a purpose which hereinafter appears.

18 are vertical pins journaled in openings 13 and provided with heads or enlargements 19, fitting rotatably in the enlargements 14 of said openings 13, and the heads of said pins are provided with recesses 20, of substantially the same depth as grooves 15 and 16, the recesses of the pins when the latter are in one position of adjustment forming continuations of the grooves 15 and when disposed at right angles to said adjustments, continuations of the recesses 16. In the former case, the non-recessed portions of the heads form an unbroken continuation of the arms 11 and in the latter case, of the arms 12. The pins are provided with slotted arms 21 projecting through the recesses 17

and slidably receiving screw bolts 22, mounted in the forked ends of crossed bars 23 pivotally mounted on pivot bolt 24, carried by an underlying support or plate 25, bearing a rigid relation to the trackway. Each cross bar at opposite sides of its pivotal point, is formed with an opening 26, through which extends pairs of pivot pins 27, and pivotally connected at their inner ends to said pivot pins and to each other at their outer ends are pairs of links 28 constituting toggles. The pivot pins 29 connecting the links together, are mounted in the forked ends 30 of rods 31 pivoted at their outer ends to the arms 4 depending from the rock shafts 3.

Assuming that the parts are arranged as shown in Fig. 1, it will be apparent that a train in traversing tracks 2 in either direction will pass over the crossing without affecting the operative mechanism thereof and that in such passage the flanges of the wheels will pass through the grooves 16 and recesses 20, and the wheels will roll upon the upper ends of the pins 18 outward of their recesses 20, the upper ends of the pins constituting sections of a continuous support so that there will be no perceptible shock or jar incident to the passage of the train over the crossing. The wheels at one side of a train traversing tracks 1 in either direction will depress one of the levers 6, pivoted to rail 1, and thus rock shaft 3 and through the arm 4 thereof, the connected rod 31 and the links 28 connecting said rod with the bars 23, rock the latter to the position indicated by dotted lines, Fig. 1, the said bars through their pin and slot connections with arms 21, turning the pins ninety degrees, so that the recesses 20 of said pins shall be disposed in alinement with the recesses 15 at the inner sides of arms 11, to provide an unbroken support for the wheels in passing over the crossing, the pins remaining in the position mentioned until returned to their original positions by another train traversing track rails 2. When the bars 23 are rocked by the pull thereon of the links 28 directly linked to the actuating rock-shaft, the opposite pair of links is contracted to permit the other lever 6 of trackway 1 to drop and the remaining pair of links are expanded to simultaneously elevate the levers of trackway 2, the depression of the last-named levers reelevating the levers of rails 1, as will be readily understood.

While the drawings and description provide only for the automatic operation of the pins by passing trains, it will be apparent that the pins may be rotated manually or otherwise. Where the crossing is in a railroad yard it will frequently be found desirable to actuate the pins from a switch tower.

From the above description it will be apparent that we have produced a railway

crossing possessing the features of advantage enumerated as desirable and we wish it to be understood that while we have illustrated and described the preferred embodiment of the invention we do not wish to be restricted to the exact details of construction shown and described as obvious modifications will suggest themselves to one skilled in the art.

We claim:

1. In a railway crossing, a vertical pin journaled at each point of intersection of the rails, and arranged with its upper end in substantially the plane of the tops of the rails and provided with a recess in such end, crossed bars pivoted together centrally of the crossing and pivotally connected at their outer ends to said pins, four pairs of links pivotally connected at their inner ends to the crossed bars and each pair pivotally connected at their outer ends, and means for exerting an outward pull on either of said pairs of links to effect pivotal operation of said crossed bars and the simultaneous rotation of all of the pins.

2. In a railway crossing, a vertical pin journaled at each point of intersection of the rails, and arranged with its upper end in substantially the plane of the tops of the rails and provided with a recess in such end, crossed bars pivoted together centrally of the crossing and pivotally connected at their outer ends to said pins, and train-actuated means for pivotally operating said crossed bars in opposite directions simultaneously to rotate said pins a quarter revolution.

3. In a railway crossing, a vertical pin journaled at each point of intersection of the rails, and arranged with its upper end in substantially the plane of the tops of the rails and provided with a recess in such end, crossed bars pivoted together centrally of the crossing and pivotally connected at their outer ends to said pins, levers pivoted to each trackway at opposite sides of the crossing, and means actuated by the depression of either of said levers for operating said crossed bars and reversing the positions of said pins.

4. In a railway crossing, a vertical pin journaled at each point of intersection of the rails, and arranged with its upper end in substantially the plane of the tops of the rails and provided with a recess in such end, crossed bars pivoted together centrally of the crossing and pivotally connected at their outer ends to said pins, levers pivoted to each trackway at opposite sides of the crossing, and means whereby the depression of one of the levers of one of the trackways shall operate said crossed bars and reverse the positions of said pins and at the same time effect the elevation of the levers of the other trackway.

5. In a railway crossing a vertical pin

5 journaled at each point of intersection of the rails and arranged with its upper end in substantially the plane of the tops of the rails and provided with a recess in such end, 10 crossed bars pivoted together centrally of the crossing and pivotally connected at their outer ends to said pins, levers pivoted to each trackway at opposite sides of the crossing, rock-shafts for each trackway at 15 opposite sides of the crossing, each provided with an arm engaging the underside of the adjacent lever and with another arm, a rod

pivotally connected at its outer end to each of the last-named arms, and a pair of links pivotally connected at their outer ends to each of said rods and pivotally connected at their inner ends to said crossed levers.

In testimony whereof we affix our signatures, in the presence of two witnesses.

JOHN N. HALL.

ARTHUR A. HODGSON.

Witnesses:

HELEN C. RODGERS,

G. Y. THORPE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."