955,346.

E. McKEE & B. H. COURSEY.

RAILWAY CROSSING.

APPLICATION FILED JUNE 1, 1909.

Patented Apr. 19, 1910.

2 SHEETS—SHEET 1.

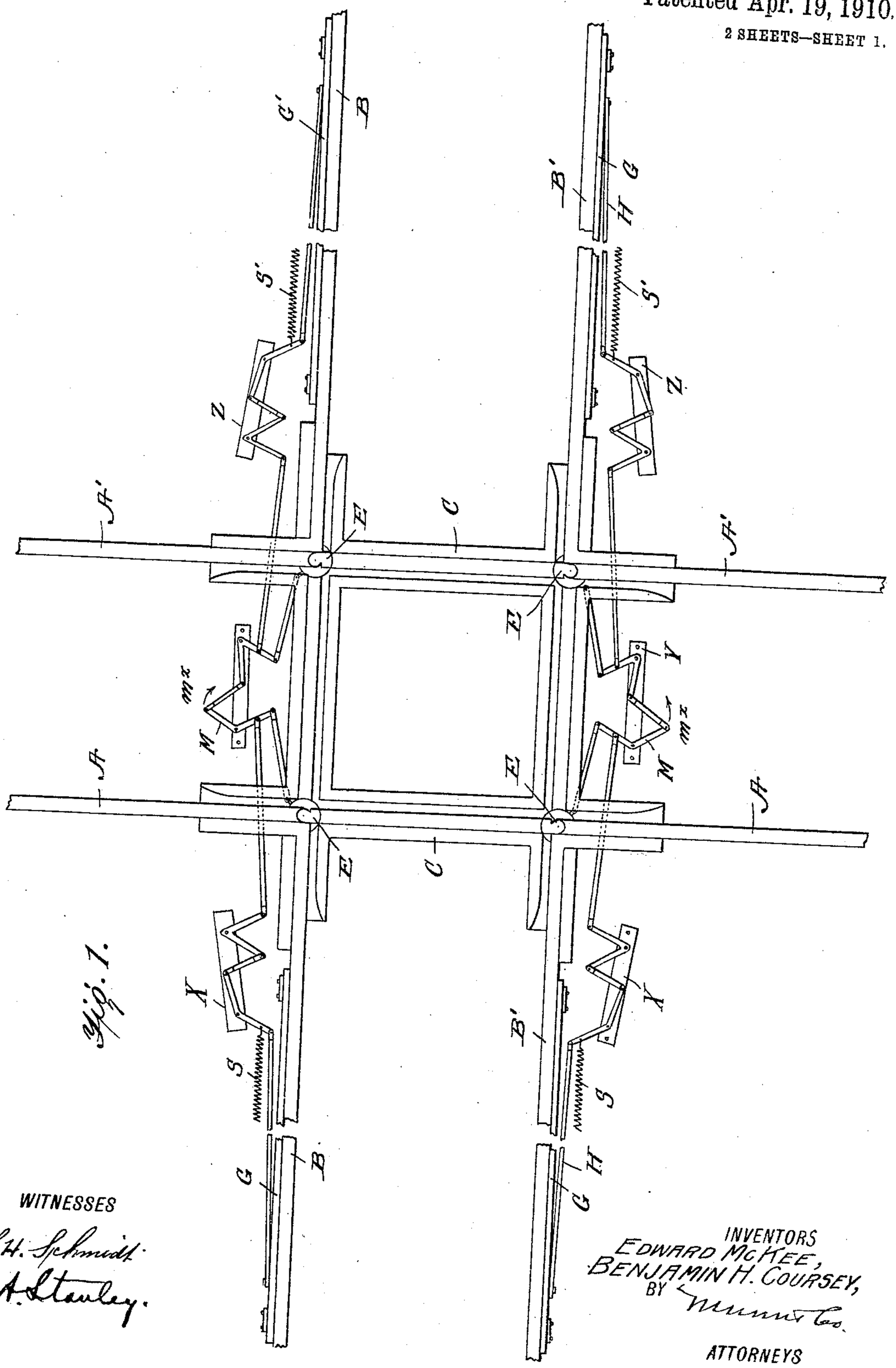

Fig. 1.

WITNESSES

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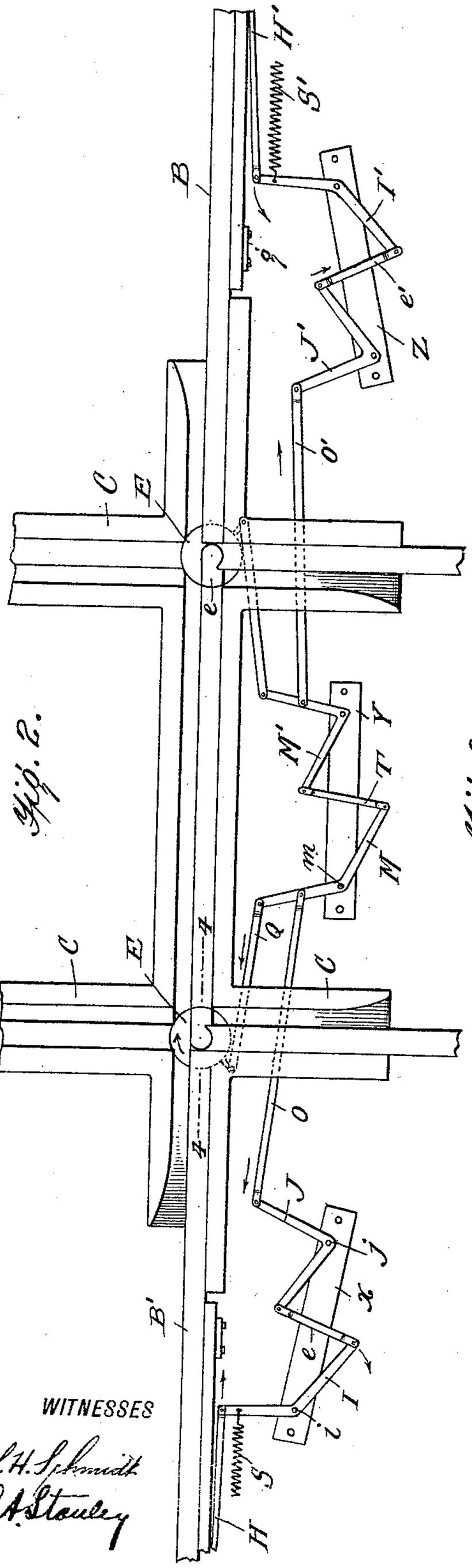

Fig. 2.

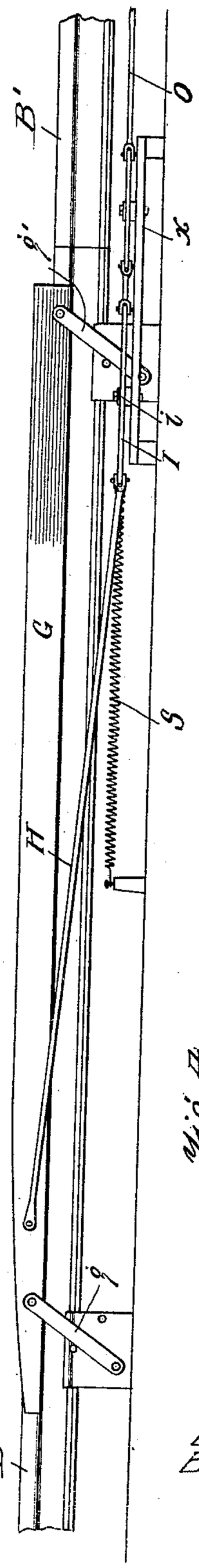

Fig. 3.

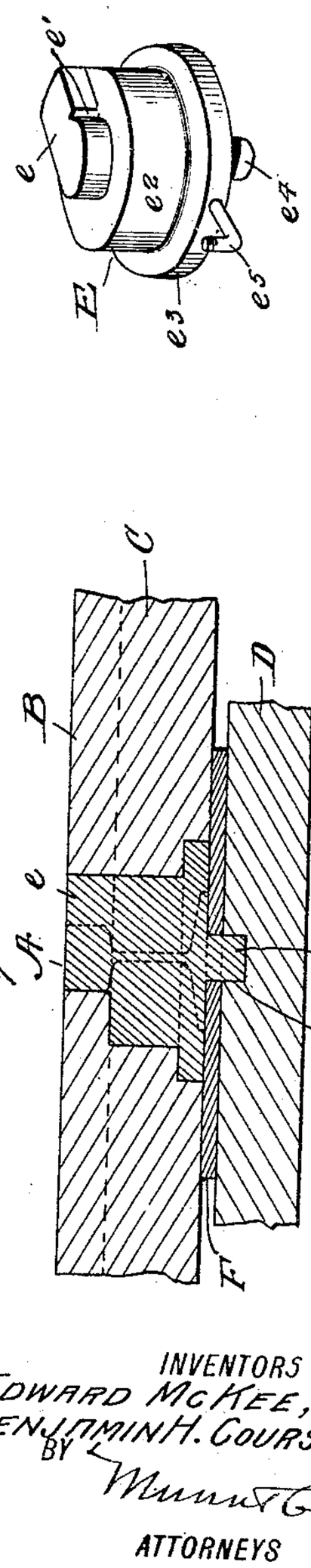

Fig. 4.

Fig. 5.

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UNITED STATES PATENT OFFICE.

EDWARD McKEE AND BENJAMIN H. COURSEY, OF ASHLEY, ILLINOIS; SAID COURSEY ASSIGNOR OF ONE-THIRD OF HIS RIGHT TO JAMES P. M. HARRISON, OF ASHLEY, ILLINOIS.

RAILWAY-CROSSING.

955,346. Specification of Letters Patent. **Patented Apr. 19, 1910.**

Application filed June 1, 1909. Serial No. 499,369.

To all whom it may concern:

Be it known that we, EDWARD McKEE and BENJAMIN H. COURSEY, citizens of the United States, and residents of Ashley, in the county of Washington and State of Illinois, have made certain new and useful Improvements in Railroad-Crossings, of which the following is a specification.

Our invention relates to an improved railroad crossing, and it consists in the constructions, combinations and arrangements herein described and claimed.

The main object of our invention is to provide a crossing in which the objections and annoyances occasioned by the jolting of the wheels as they ride over the slots provided for the wheel flanges are eliminated.

A further object of our invention is to provide a simple device which may be automatically operated by the moving train itself or which may be operated by hand, as from a switch tower or other convenient place as desired, for closing the transverse slot so that the wheels of the train may have a continuous bearing surface.

Further objects and advantages will appear in the following specification and the novel features of the device will be particularly pointed out in the appended claims.

Our invention is illustrated in the accompanying drawings in which similar reference characters indicate like parts in the several views and in which—

Figure 1 is a plan view of a railroad crossing provided with our improved mechanism, and showing the same in normal position. Fig. 2 is a plan view of one of said mechanisms in its shifted position. Fig. 3 is a side view showing the lever rail. Fig. 4 is a sectional view along the line 4—4 of Fig. 2 and Fig. 5 is a perspective view of the oscillating rail section.

Referring now to Fig. 1, we have shown therein the rails A, A′ and B, B′ of two tracks at right angles to each other. At the intersection of these tracks there is a central casting denoted in general by C which has thereon a continuation of the four rails as in the ordinary form of railway crossing. Instead of a single casting, these rails may be separate and secured to a base plate as desired. At the points of intersection of the various rails we cut away a portion of the casting C in a manner clearly indicated in Fig. 4. Underneath this portion of track is a bearing plate D which has a recess *d*.

The oscillating rail section E is shown in Fig. 5. It consists of an upper bearing portion *e* having a V-shaped slot *e′* on one side, the integral cylindrical portion e^2 which supports the bearing member *e* and a lower flanged portion e^3 having a downwardly projecting pin e^4 on its underside. The pin e^4 is arranged to enter the recess *d* in the plate D while the portion e^2 and flange e^3 respectively are arranged to enter openings in the plate C as shown in Fig. 4. Between the bearing plate D and the rail section E is a hardened steel plate F.

Referring now to Fig. 4 it will be seen that with the parts in position as described, the upper surface of the bearing member *e* is flush with the rails.

Referring to Fig. 1 it will be noted that the normal position of the oscillating rail sections E is such as to make a continuous track of the rails A and A′. These oscillating rail sections may be turned 90° however so as to make a continuous track of the rails B and B′. The means by which this is done may be automatic or manual. The automatic means consists of a lever rail G, most clearly shown in Fig. 3, which is pivotally supported by means of end links *g* and *g′* on the track in close proximity to the main rail. Each lever rail G is connected by means of the rod H to a system of levers arranged to operate on the oscillating sections. A description of one of these mechanisms will suffice for both, since they are practically the same on both sides of the track.

Referring then to Fig. 2, at the left hand side of the figure is seen the end of the rod H which is pivotally connected to a bell-crank lever I pivoted at *i*, the latter being in turn connected to a bell-crank lever J pivoted at *j* by the link *l*. The link O connects the bell-crank lever J with the bell-crank lever M which is pivoted at *m* and is connected with the oscillating rail section *e* by means of a link Q which engages an upturned pin e^5 on the latter. On the other side of the transverse track is a similar lever rail H′ which has the similar connections

I′, l′, J′, O′, M′ and Q′. The bell-crank levers M and M′ are connected together by means of a link T. Each of the levers I and I′ are constantly under the tension of the springs S and S′ respectively.

The system of links and levers as described, is shown clearly in the figures. Each of the links corresponding to Q is fastened to the pin e^5 of the oscillating rail sections. The links O and Q pass underneath the rail castings C and the levers are pivoted upon suitable supports X, Y and Z.

From the foregoing description of the various parts of the device, the operation thereof may be readily understood.

The normal position of the apparatus as heretofore stated is shown in Figs. 1 and 3 in which the oscillating rail sections E are turned to make a continuous track of the rails A and A′. In this position the lever rail G projects slightly above the main rail B′. If a train approaches in the direction indicated by the arrow in Fig. 3, the lever rail G will be pressed downwardly and will cause a forward thrust on the rod H against the tension of the spring S. The various levers and links will be then moved in the direction indicated by the small arrows in Fig. 2. Since there is a set of apparatus for each side of the track, the oscillating rail e will be turned to close the transverse slots across the tracks B, B′ thereby rendering the said track continuous and obviating the jolting caused by the wheels hitting the edges of the slots. As long as the wheels of the train are on either of the lever rails G or G′ across the track A, A′, the mechanism will be held in its shifted position as shown in Fig. 2, but as soon as the train passes the lever rails then the tension of the springs S and S′ will cause the mechanism to assume its normal position, shown in Figs. 1 and 3 in which the oscillating rail sections E now close the slots in the track A, A′.

Since there is a lever rail on the track B, B′, on either side of the track A, A′, a train approaching from either direction will operate the device automatically.

The device may be operated manually by applying force at the outer end $m^\times$ of the bell-crank levers M in the direction indicated by the arrow, see Fig. 1. This may be done by a wire from a switch tower or by a hand lever operating at $m^\times$ or in any other suitable manner.

We claim:—

1. A railroad crossing comprising intersecting tracks provided with slots for the wheel flanges, an oscillating rail section at each intersection of the rails, for closing certain of the slots during the passage of a train, said rail section comprising a rotatable spring actuated plate, a bearing member carried thereby provided with a slot arranged to engage a portion of the rail for limiting the movement of the bearing plate, and means secured to the track for causing the movement of the bearing plate.

2. A railroad crossing comprising intersecting tracks, a central casting at the intersection of said tracks, said casting having bearing portions constituting rails and slots for the wheel flanges, an oscillating rail section disposed at each intersection of the rails, said oscillating rail section comprising an upper bearing portion having a V shaped slot on one side adapted to engage a portion of the rail to limit the movement, a cylindrical portion for supporting said bearing member, and a lower flange portion having a downwardly projecting pin on its under side, a bearing plate provided with an opening arranged to receive the pin, and means for causing the turning of the rail section so as to close certain of the slots at the approach of a train.

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Witnesses:
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