

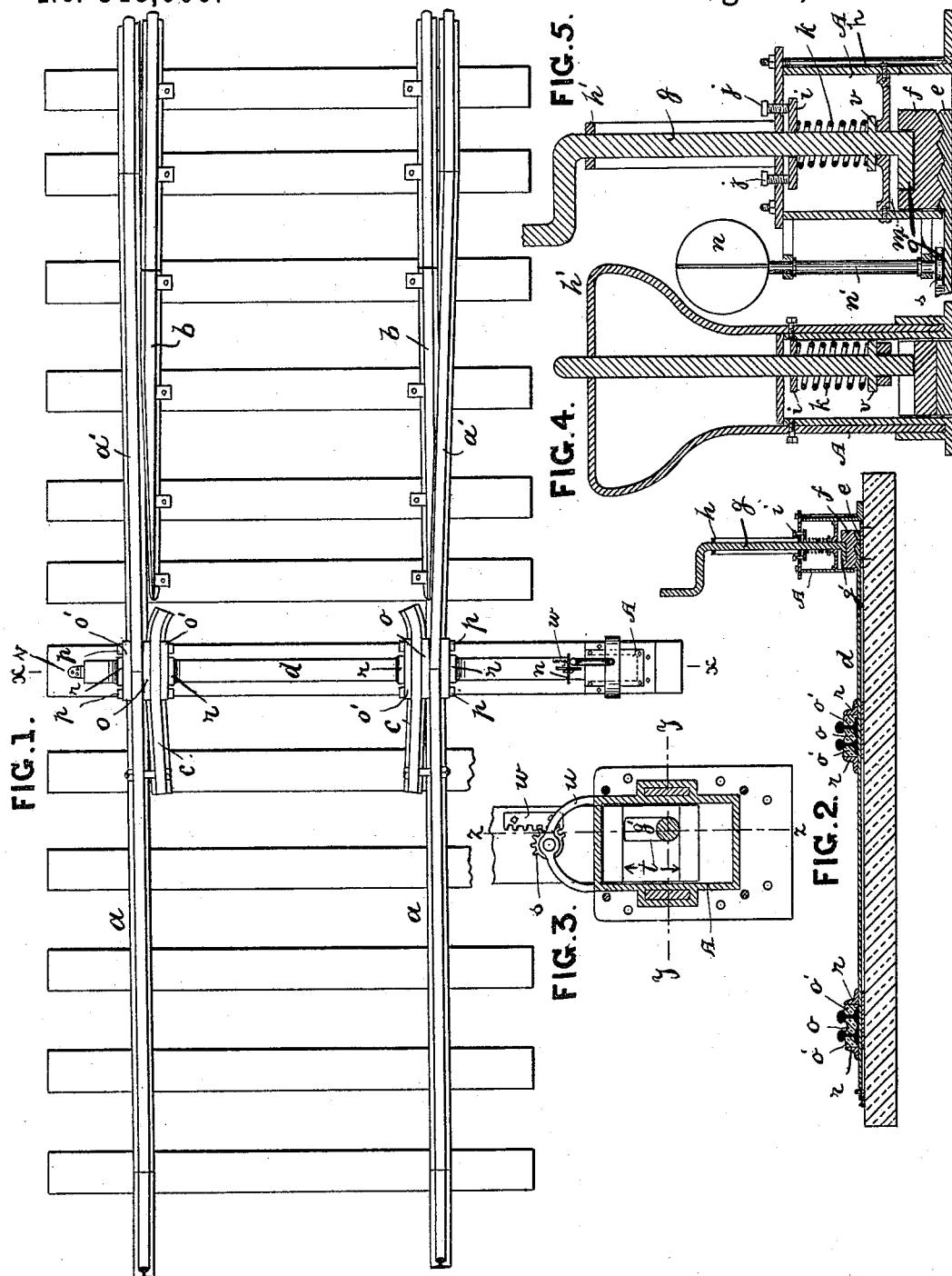
(No Model.)

E. GORDON.

RAILROAD SWITCH AND SWITCH STAND.

No. 348,006.

Patented Aug. 24, 1886.



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EDWIN GORDON, OF HYDE PARK, MASSACHUSETTS.

RAILROAD SWITCH AND SWITCH-STAND.

SPECIFICATION forming part of Letters Patent No. 348,006, dated August 24, 1886.

Application filed February 8, 1886. Serial No. 191,149. (No model.)

To all whom it may concern:

Be it known that I, EDWIN GORDON, a citizen of the United States, residing at Hyde Park, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Railroad Switches and Switch-Stands; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

The object of my invention is a combined automatic railroad switch and switch-stand so constructed that in case of a displacement of the switch-rails they will move automatically and permit the safe passage of trains, the switch-handle remaining locked.

I accomplish the switching by the use of two fixed point-rails, each being in combination with a pair of jointed continuous switch-rails and with the guard-rails, the opposite jointed middle ends of the switch-rails being connected at gage with the switch-bar, which being moved sidewise the switch-rails are set for the main line or for the branch track or siding.

In the drawings I show, in Figure 1, a plan view of my invention; in Fig. 2, a sectional view of the same on the line *xx* of Fig. 1; in Fig. 3, an enlarged plan view of the switch-stand and target and their connections; in Fig. 4, an enlarged section of the switch-stand on the line *yy* of Fig. 3, and in Fig. 5 the same on line *zz* of Fig. 3.

a a' are continuous jointed rails; *b b'*, fixed point-rails firmly attached to the ties, so as to permit of no motion. *c c'* are guards with the ends reaching across the point of junction of the continuous rails *a a'*, and so placed as to prevent the wheels of the locomotive or cars from striking the ends of the point-rails. *d* is a switch-bar for moving the continuous rails *a a'*.

The inner ends of the movable rails and one end of the guard-rails are fastened together by placing a block, *o*, of cast-iron or steel, about twelve inches long, between the guard-rail and the switch-rail ends, the center of the block as to its length being placed opposite to the point where the rail ends meet. A block of the same length is also placed opposite on the other side of the rail ends, and

one opposite on the other side of the guard-rail. These three blocks conform to the shape of the sides of the rails, except that one of them is slightly cut away at an angle from the center to permit of the lateral motion of the two rails which are parallel with the point-rails. The two outside blocks, *o' o'*, are of such a thickness as to have a bearing on a line with the bottom of the connecting switch-rail ends and the guard-rails, and the guard-rails and the several parts, as described, are firmly fastened together by the bolts *p p*. The center block, *o*, is of the proper thickness to hold the guard at that point at such a distance as will allow the wheel-flanges to pass. The parts are so adjusted that when the switch is open for the main line or the branch the end of the point on one side is at a greater distance from the switch-rail than the width of the space between the connected guard-rail and the rail ends. These connected parts rest upon the switch-bar *d*, with side pieces, *r r*, riveted or welded to the switch-bar and turned up at right angles, thus holding the rails at that point at gage, and with the bolts they hold the connected parts firmly together.

The switching is accomplished by moving the continuous rails in the manner described in Letters Patent to me, dated October 28, 1884, and numbered 307,189.

A is a switch-stand composed of an oblong covered box, *h*, about twelve inches high inside, and having a flanged bottom, through which the stand is spiked to the tie beneath, and the frame *h'*, supporting the switch-stand shaft *g*, on which shaft is placed the switch-handle. Attached to the switch-stand are two arms, *u u*, one above the other. Through these arms passes the target-shaft *n'*, capable of turning freely in the sockets in the arms. On the target-shaft is the target *n*, and at its base is the gear *s*, gearing into the ratchet *w*, which is attached to the switch-bar *d*. In the base of the oblong box *h* of the switch-stand is placed one end of the switch-bar *d*, the width of the box inside and the width of the switch-bar being the same. On the top side of the end of the switch-bar thus inclosed, and which is about half an inch thicker than the bar outside the box, are the corrugations *e*, about half an inch deep, cut across the top surface at a right angle with the switch-bar as to its length.

Placed on the top of this corrugated end of the switch-bar is the oblong block *f*, of a suitable thickness, and of the same width as the switch-bar, its length being determined by the throw of the switch, which being two and one-quarter inches, the length of the block will be so much shorter than the space inside the box, so that the block can move forward and back two and one-quarter inches. In the under side of this block are corrugations accurately fitted to those on the switch-bar. In the top surface of the block *f* is cut across the middle the space *t*, in which the cam *g'* on the lower end of the upright switch-stand shaft *g* rests. The throw of the switch is determined by the length of the cam *g'*, which is properly adjusted for that purpose to the space *t*. Round the upright switch-stand shaft *g* is the spiral spring *k*, bearing on the collar *v*, attached to the switch-shaft. The upper end of the spring is in contact with the movable plate *i*, which may be adjusted by means of the set-screws *j*; but the plate and the set-screws may be dispensed with, in which case the spring *k* will be made to fill the space between the collar *v* and the under side of the cover of the switch-box. The spring is of such a size as to hold down the switch-stand shaft with the cam end resting on the block *f* with such force as to prevent the interlocking corrugations from separating when the switch-rails are thrown by hand.

The operation is as follows: If at any time the switch should be misplaced for trains moving along the main track off the point-rails, not toward them, or for trains coming onto the main track from a siding or branch track, the locomotive-wheel flanges in either case will force sidewise the switch-rails *a a'* into gage by forcing the switch-bar out of the interlocked corrugations on the end which is in connection with the switch-stand, by pushing

up the block *f* the required distance against the spring *k*, and in preventing the cam *g'* from moving at the same time in a line with the switch-bar. The distance from the center of one interlocking space and the next one is the same as the throw, and the switch-bar can only move one such space forward and back, as in one case, or when the switch-rails are forced sidewise into gage for the main track the end of the switch-bar will stop at the right place by coming in contact with the back end of the switch-box *h*, and when the switch-rails are forced sidewise by wheel-flanges into gage for a train coming onto the main track the switch-bar can only move as far as the stop *z*.

What I claim, and desire to secure by Letters Patent, is—

1. The blocks *o o'*, the bolts *p*, the guard-rails *c*, the switch-bar *d*, and the switch-rails *a a'*, in combination with the fixed point-rails *b*, substantially as described.

2. The upright switch-shaft *g*, with the collar *v* and cam *g'*, the spring *k*, the box *h*, the block *f*, with the cam-space *t* in the upper side and with the corrugations in the under side, and the switch-bar *d*, with the corrugated end *e*, in combination, substantially as described.

3. The upright switch-shaft *g*, with the cam end *g'*, the collar *v*, the spring *k*, and the block *f*, with the cam-space *t* in the top side and the bottom corrugations, in combination with switch-bar *d*, with the corrugated end *e*, interlocking with the corrugations on the block *f*, the two pairs of switch-rails *a a'*, the blocks *o o'*, bolts *p*, the attached guard-rail *c*, and the fixed point-rails *b*, substantially as described.

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Witnesses:

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