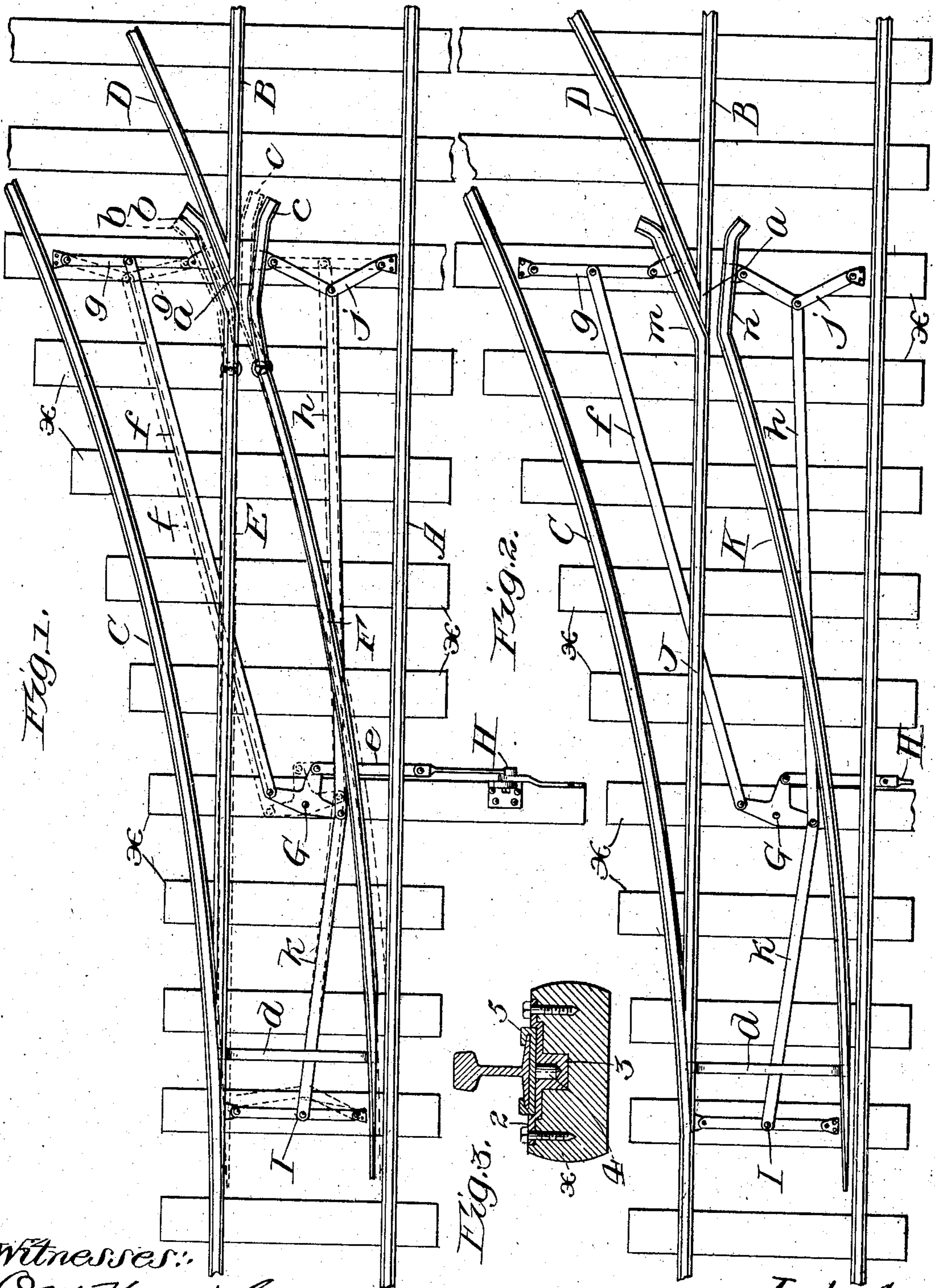


No. 827,395.

PATENTED JULY 31, 1906.

H. A. ROSBACK.
RAILWAY SWITCH.
APPLICATION FILED MAR. 19, 1906.



Witnesses:
O. W. Hemmick
E. K. Lundy.

Inventor:
Henry A. Rosback
By Frank D. Thompson
Atty

UNITED STATES PATENT OFFICE.

HENRY A. ROSBACK, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO
MINNIE C. WRIGHT, OF CHICAGO, ILLINOIS.

RAILWAY-SWITCH.

No. 827,395.

Specification of Letters Patent.

Patented July 31, 1906.

Application filed March 19, 1906. Serial No. 306,853.

To all whom it may concern:

Be it known that I, HENRY A. ROSBACK, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Railway-Switches, of which the following is a clear, full, and exact description.

My invention relates to railway-switches; and its object is to dispense with frogs and to make a switch which when once thrown will keep the rails securely locked, so that it cannot vibrate to such an extent when a train passes over the switch as to throw the switch-lever or break the connections therewith, as is sometimes done with the switch-levers now in use, and which can be set to provide either a continuous main track or a continuous switch-track. This I accomplish by the means hereinafter fully described and as particularly pointed out in the claims.

In the drawings, Figure 1 is a plan view of my invention. Fig. 2 is a similar view of a modified form thereof. Fig. 3 is a detail view showing a transverse section of the pivot of the rail and tie supporting the same.

In the drawings, A represents the continuous straight rail of the main track; B, the short length of the straight rail of the main track; C, the continuous curved rail of the switch, and D represents the short length of the curved rail of the switch. The short straight rail B and short switch-rail D are brought together and their ends cut and joined to form a point *a*. Between this point and the transverse plane of the place where the continuous curved rail C of the switch merges into the main track the movable rail-sections of the switch are located. These consist of a movable main-track section of rail E, which when the switch is closed aligns with the short straight rail B, and the movable curved switch-section of rail F, which when the switch is open forms a continuation of the short curved switch-rail D. The rail E has its end portion, which engages the continuous switch-rail C, split in the usual manner, and so likewise is the adjacent end of the movable switch-section of rail F split to engage the continuous straight rail A of the main track. Both rails E and F are secured to the ties *xx* near their opposite ends in such manner that their split ends have the necessary spring to them to move in and out of engagement with the continuous rails, and at

their opposite ends, which are but a short distance removed from point *a*, they each have pivotally connected thereto the extensions *b c*. Extension *b* of the movable main-track section E is so shaped or bent that when the switch is closed it extends to point *a* in alignment with rail B and is then deflected at such an angle that a part of its length will be parallel to and engage rail D on one side of point *a* and its extremity farthest from its pivot is turned at an angle obliquely away from said rail D. Extension *c* is shaped or bent in the same manner as extension *b*, but in the opposite direction and so that when the switch is open it will between its pivoted end and point *a* align with rail D, and the remainder of its length, except its offset extremity farthest from the pivoted end, will be parallel to and bear against rail B.

The split ends of rails E and F are connected together in any suitable manner by a cross-bar *d* and are placed such a distance apart that when rail E engages rail C rail F will be out of engagement with rail A, and vice versa, and when said rail E engages rail C the extension *b* thereof will be in engagement with point *a* and a continuous through main track will be provided, and extension *c* will be out of engagement with said point. When however, rail F engages rail A, the extension *c* of said rail F will engage point *a*, and extension *b* will be moved out of engagement therewith, and a continuous through switch-track will be provided. I accomplish the movements of the rails E and F and their extensions in the manner just described by means of a T-shaped bell-crank G, which is suitably pivoted between rails A and E about opposite the centers of length of rails E and F and connected to the end of the longitudinally-disposed intermediate arm of the bell-crank G by a shifting bar *e* to a switch-lever H of any suitable type. The alining transverse arms of the bell-crank are connected one by a connecting rod or bar *f* to the knee of a toggle-joint *g*, the outer extremity of one link of which is pivotally connected to the extension *b* and the outer extremity of the other link of which is fulcrumed to the tie *xx* or by a suitable lug to rail C. The other alining arm of the bell-crank is connected by a connecting-rod *h* to a toggle-joint *j*, the extremity of one arm of which is pivotally connected to extension *c* and the opposite end of the other arm of which is pro-

vided with a stationary fulcrum secured either to the tie or directly or indirectly to the rail A.

The arm of the bell-crank to which rod *h* is connected has a rod *k* connected thereto and extending in a direction opposite therefrom to a point between the split ends of movable rails E and F, where it is connected to the knee of a toggle-joint I. One end of one of the links of this joint I is connected to rail E and the opposite end to a tie *x*. When the bell-crank is moved to the position shown in Fig. 1 of the drawings, toggle-joints *g* and I will be straightened to make the main track continuous, and toggle-joint *j* will be bent. When the bell-crank is moved to the position shown in dotted lines in said Fig. 1, toggle-joints *g* and I will be bent, and toggle-joint *j* will be straightened to open the switch and provide a continuous switch-track. The use of these toggle-joints secures the rails of the track rigidly in the position desired, and the shock and concussion of a train moving fast over the same will not vibrate them or communicate vibrations through them to the switch-lever mechanism and throw it involuntarily out of position to permit any change of position of the rails.

In Fig. 2 of the drawings I show a modified form of my invention which consists in making the movable main-track rail J and the movable switch-rail K opposite the split ends thereof with integral ends *m n*, which take the place of the pivoted extensions *b c* of my invention, as shown in Fig. 1 of the drawings, and perform the same functions. In their modified form the movable rails J and K are secured to the ties at about their centers of length, and both their split ends and their ends *m n*, which alternately engage point *a*, are made to possess a certain amount of spring, whereby through the medium of the toggle-joints *g h* they are made to perform the same functions as said pivoted extensions *b c*. I desire to be considered as contemplating both of these forms of movable rails as coming within the scope of my invention.

I do not wish to be confined to any particular means for pivoting the end of the extensions *b c* to the rails E and F. I prefer, however, to employ the means shown in Fig. 3 of the drawings, in which the tie *x* is provided with a plate 2, that has a socket 3 mediate its ends for the pivotal stud 4 of a chair 5, in which the flange of the end extension-rail is suitably secured. As stated, however, other means for pivoting the ends of the extensions may be employed, if desired.

What I claim as new is—

60 1. A railroad-switch comprising a main track having a continuous straight rail and a short straight section, and a switch-track having a continuous curved rail and a short curved section, the ends of the short straight section and the short curved section being

connected to form a point, and a movable main-track section of rail and a movable curved switch-section of rail interposed between said point and the transverse plane where the continuous curved switch-rail merges into the main track, and means separately connected to the ends of said movable main-track section and movable curved switch-section for alternately moving said ends to and from said point. 75

2. A railroad-switch comprising a main track having a continuous straight rail and a short straight section, and a switch-track having a continuous curved rail and a short curved section, the ends of the short straight section and the short curved section being connected to form a point, and a movable main-track section of rail and a movable curved switch-section of rail interposed between said point and the transverse plane where the continuous curved switch-rail merges into the main track, which movable rails lap past said point and are connected to separate means for alternately engaging first one side and then the other of said point. 85 90

3. A railroad-switch comprising a main track having a continuous straight rail and a short straight section, and a switch-track having a continuous curved rail and a short curved section, the ends of the short straight section and the short curved section being connected to form a point and a movable main-track section of rail and a movable curved switch-section of rail interposed between said point and the transverse plane where the continuous curved switch-rail merges into the main track which have extensions pivoted to the ends thereof that are connected to separate means that permit said extensions to alternately engage said point. 95 100 105

4. A railroad-switch comprising a main track having a continuous straight rail and a short straight section, and a switch-track having a continuous curved rail and a short curved section, the ends of the short straight section and the short curved section being connected to form a point, and a movable main-track section of rail and a movable curved switch-section of rail interposed between said point and the transverse plane where the continuous curved switch-rail merges into the main track that have extensions pivoted to the ends thereof which lap past said point and are connected to separate means that permit said extensions to engage first one side and then the other of said point. 110 115 120

5. A railroad-switch comprising a main track having a continuous straight rail and a short straight section, and a switch-track having a continuous curved rail and a short curved section, the ends of the short straight section and the short curved section being connected to form a point, and a movable main-track section of rail and a movable curved switch-section of rail interposed be- 125 130

tween said point and the transverse plane where the continuous curved switch-rail merges into the main track, toggle-joints alternately connected to the laterally-projecting ends of said movable rail-sections and means for connecting the same.

6. A railroad-switch comprising a main track having a continuous straight rail and a short straight section, and a switch-track having a continuous curved rail and a short curved section, the ends of the short straight section and the short curved section being connected to form a point, and a movable main-track section of rail and a movable curved switch-section of rail interposed between said point and the transverse plane where the continuous curved switch-rail merges into the main track, which are adapted to alternately engage said point, toggle-joints alternately connected to the laterally-projecting ends of said movable rail-sections and means for connecting the same.

7. A railroad-switch comprising a main track having a continuous straight rail and a short straight section, and a switch-track having a continuous curved rail and a short curved section, the ends of the short straight section and the short curved section being connected to form a point, and a movable main-track section of rail and a movable curved switch-section of rail interposed between said point and the transverse plane where the continuous curved switch-rail merges into the main track, which lap past said point and alternately engage first one side and then the other thereof, toggle-joints alternately connected to the laterally-projecting ends of said movable rail-sections and means for connecting the same.

8. A railroad-switch comprising a main track having a continuous straight rail and a short straight section, and a switch-track having a continuous curved rail and a short curved section, the ends of the short straight section and the short curved section being connected to form a point and a movable main-track section of rail and a movable curved switch-section of rail interposed between said point and the transverse plane where the continuous curved switch-rail merges into the main track which have extensions pivoted to the ends thereof that alternately engage said point, toggle-joints operatively connected to the said extensions and opposite split ends of said movable rails, and means for connecting the same.

9. A railroad-switch comprising a main track having a continuous straight rail and a short straight section, and a switch-track having a continuous curved rail and a short curved section, the ends of the short straight section and the short curved section being connected to form a point, and a movable main-track section of rail and a movable curved switch-section of rail interposed be-

tween said point and the transverse plane where the continuous curved switch-rail merges into the main track that have extensions pivoted to the ends thereof which lap past and engage first one side and then the other of said point, toggle-joints operatively connected to the said extensions and opposite split ends of said movable rails, and means for connecting the same.

10. A railroad-switch comprising a main track having a continuous straight rail and a short straight section, and a switch-track having a continuous curved rail and a short curved section, the ends of the short straight section and the short curved section being connected to form a point, and a movable main-track section of rail and a movable curved switch-section of rail interposed between said point and the transverse plane where the continuous curved switch-rail merges into the main track, toggle-joints operatively connected to the ends of said movable rails, a bell-crank, rods connecting the knees of said toggle-joints to the arms of said bell-crank, and a switch-lever for operating said bell-crank.

11. A railroad-switch comprising a main track having a continuous straight rail and a short straight section, and a switch-track having a continuous curved rail and a short curved section, the ends of the short straight section and the short curved section being connected to form a point, and a movable main-track section of rail and a movable curved switch-section of rail interposed between said point and the transverse plane where the continuous curved switch-rail merges into the main track, which are adapted to alternately engage said point, toggle-joints operatively connected to the ends of said movable rails, a bell-crank, rods connecting the knee of said toggle-joints to the arms of said bell-crank, and a switch-lever for operating said bell-crank.

12. A railroad-switch comprising a main track having a continuous straight rail and a short straight section, and a switch-track having a continuous curved rail and a short curved section, the ends of the short straight section and the short curved section being connected to form a point, and a movable main-track section of rail and a movable curved switch-section of rail interposed between said point and the transverse plane where the continuous curved switch-rail merges into the main track, which lap past said point and alternately engage first one side and then the other thereof, toggle-joints operatively connected to the ends of said movable rails, a bell-crank, rods connecting the knees of said toggle-joints to the arms of said bell-crank, and a switch-lever for operating said bell-crank.

13. A railroad-switch comprising a main track having a continuous straight rail and a

short straight section, and a switch-track having a continuous curved rail and a short curved section, the ends of the short straight section and the short curved section being
5 connected to form a point and a movable main-track section of rail and a movable curved switch-section of rail interposed between said point and the transverse plane where the continuous curved switch-rail
10 merges into the main track which have extensions pivoted to the ends thereof that alternately engage said point, toggle-joints operatively connected to the said extensions and to the opposite split ends of the movable
15 rails, a bell-crank, rods connecting the knees of said toggle-joints to the arms of said bell-crank, and a switch-lever for operating said bell-crank.

14. A railroad-switch comprising a main
20 track having a continuous straight rail and a short straight section, and a switch-track having a continuous curved rail and a short curved section, the ends of the short straight

section and the short curved section being connected to form a point, and a movable 25 main-track section of rail and a movable curved switch-section of rail interposed between said point and the transverse plane where the continuous curved switch-rail merges into the main track that have exten- 30 sions pivoted to the ends thereof which lap past and engage first one side and then the other of said point, toggle-joints operatively connected to the said extensions and to the opposite split ends of the movable rails, a 35 bell-crank, rods connecting the knees of said toggle-joints to the arms of said bell-crank, and a switch-lever for operating said bell-crank.

In testimony whereof I have hereunto set 40 my hand this 8th day of March, A. D. 1906.

HENRY A. ROSBACK.

Witnesses:

FRANK D. THOMASON,
E. K. LUNDY