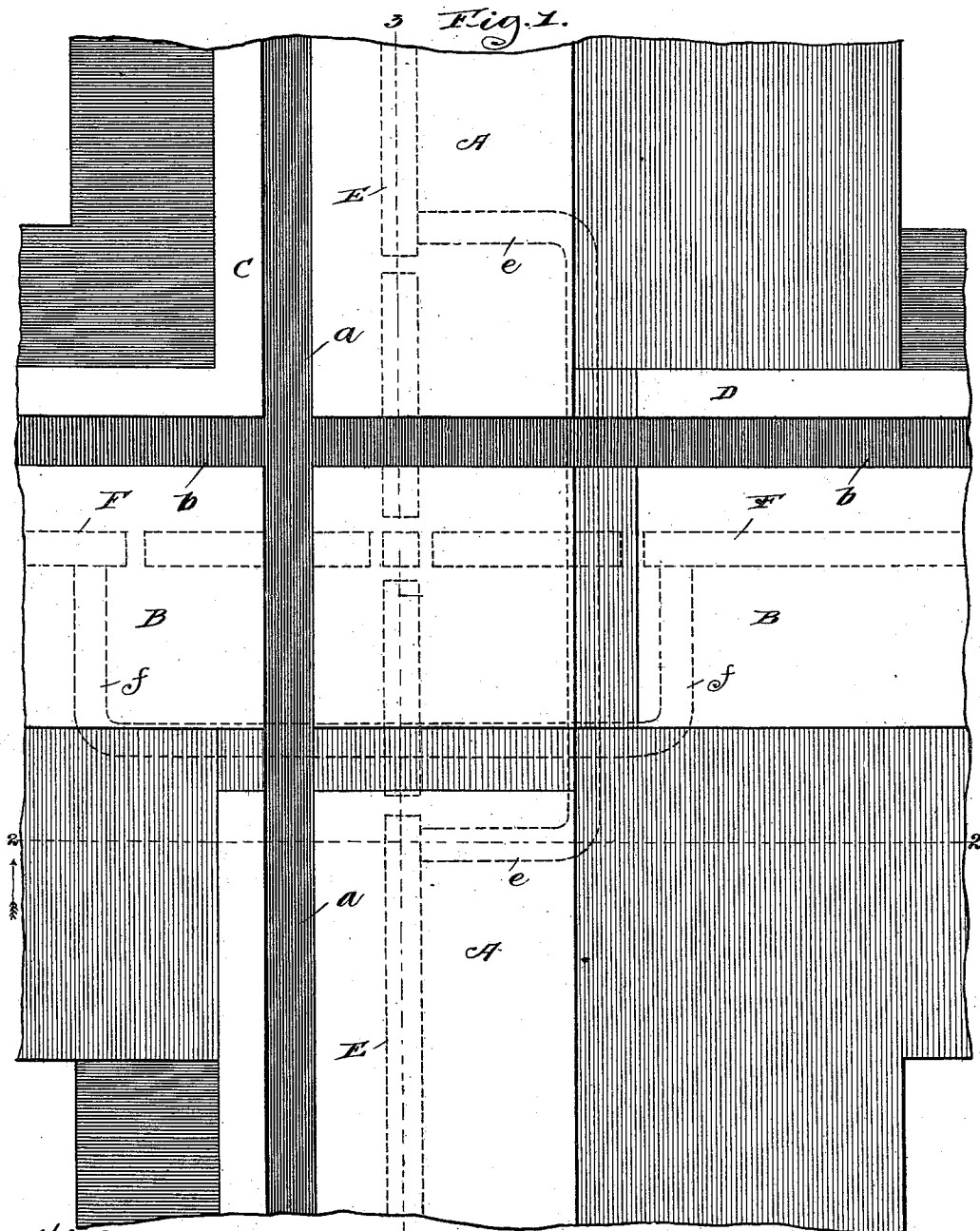


4 Sheets—Sheet 1.

No. 466,362.

Patented Jan. 5, 1892.



Inventor,

William Osner
Esq. C. C. Luthcum
Att'y

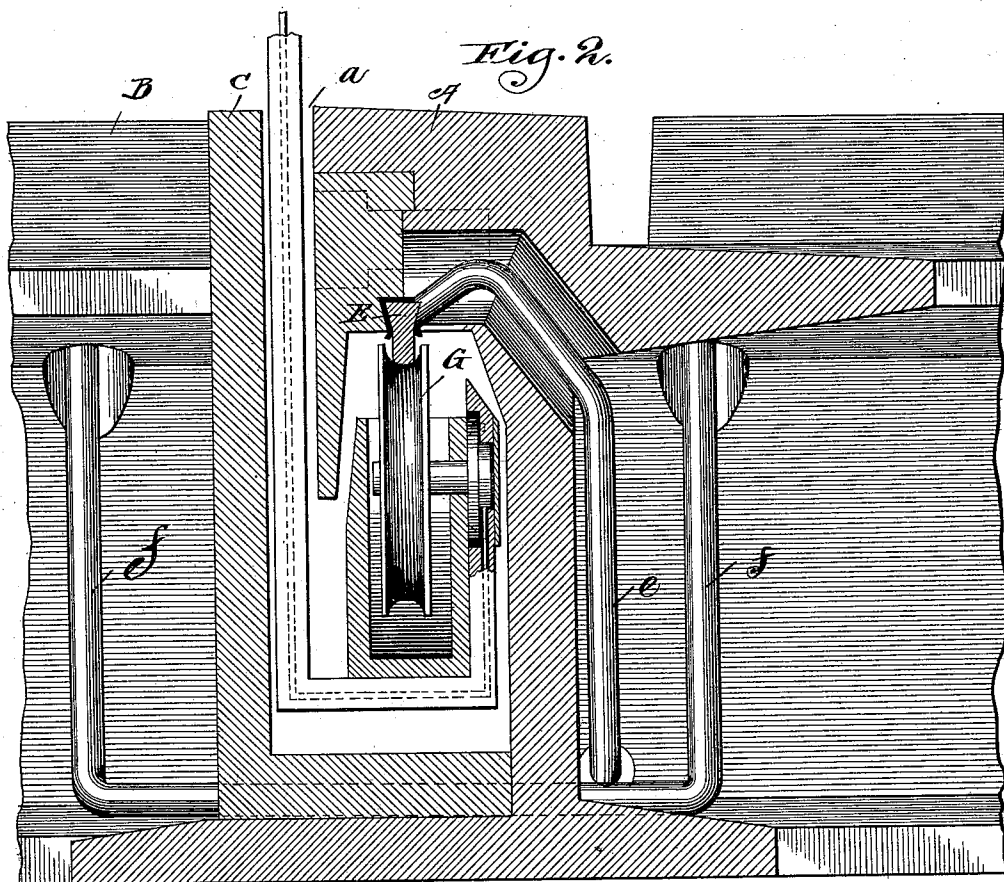
(No Model.)

4 Sheets—Sheet 2.

W. OSNER.
ELECTRIC RAILWAY CROSSING.

No. 466,362.

Patented Jan. 5, 1892.



Witnesses,
J. S. Mann,
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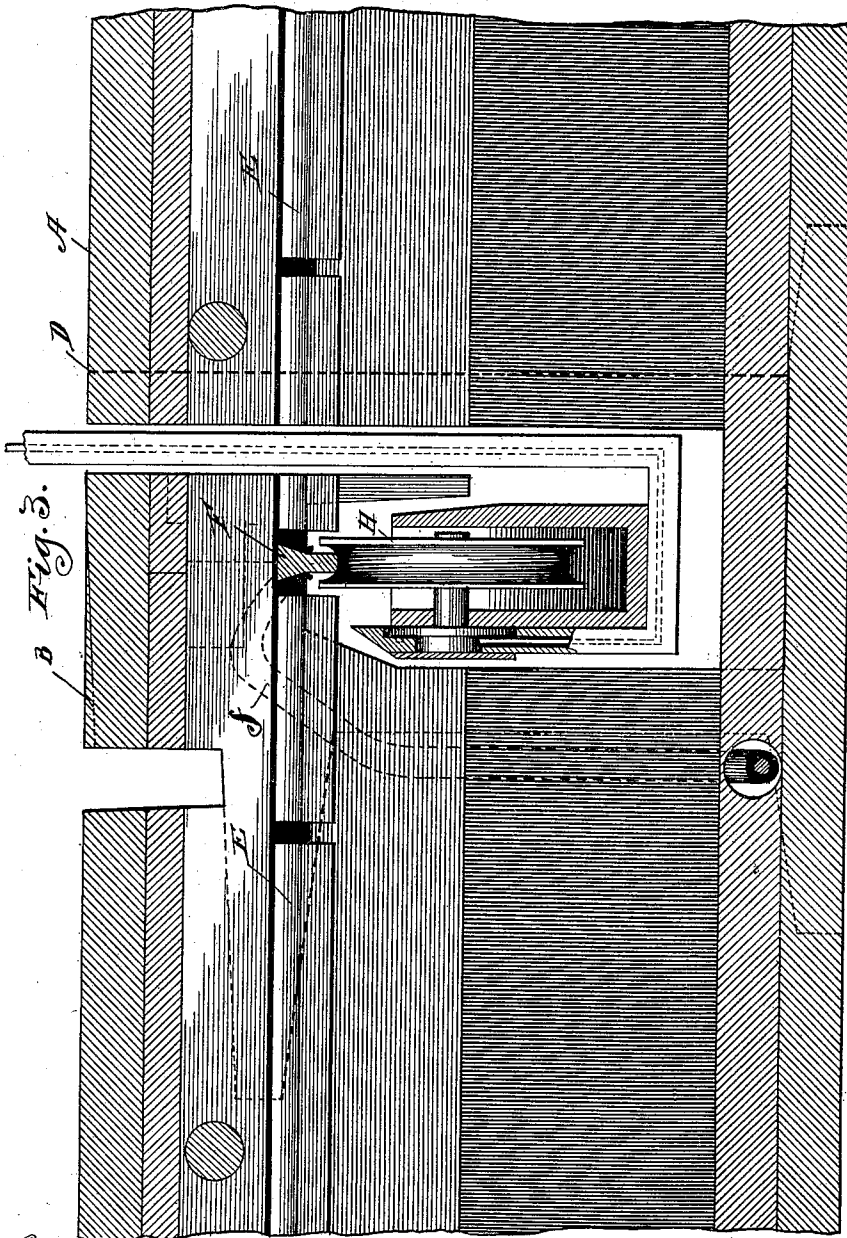
(No Model.)

4 Sheets—Sheet 3.

W. OSNER.
ELECTRIC RAILWAY CROSSING.

No. 466,362.

Patented Jan. 5, 1892.



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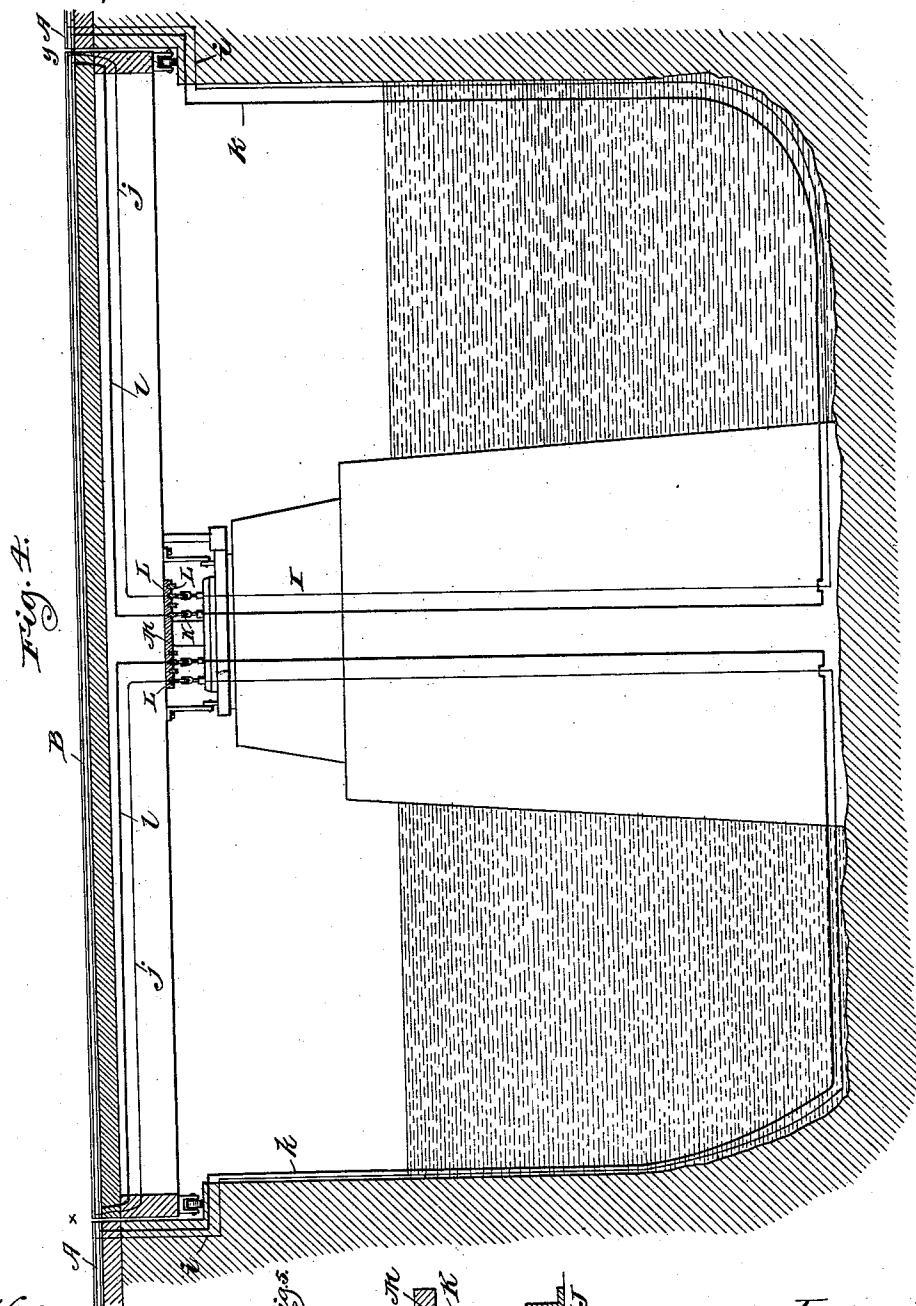
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W. OSNER.
ELECTRIC RAILWAY CROSSING.

No. 466,362.

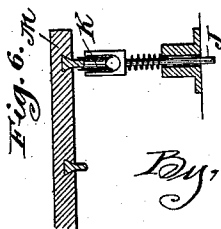
Patented Jan. 5, 1892.



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UNITED STATES PATENT OFFICE.

WILLIAM OSNER, OF CHICAGO, ILLINOIS.

ELECTRIC-RAILWAY CROSSING.

SPECIFICATION forming part of Letters Patent No. 466,362, dated January 5, 1892.

Application filed October 16, 1890. Serial No. 368,322. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM OSNER, a citizen of the United States, residing at Chicago, Illinois, have invented certain new and useful
5 Improvements in Electric-Railway Crossings, of which the following is a specification.

My invention has for its object to provide improved means whereby the electric current used to energize a driving-motor on electric
10 railways may be carried uninterruptedly beneath the operative mechanism for a crossing-line of electric railways or beneath the stream spanned by a draw-bridge without loss of current by induction or danger by
15 breaking the circuit.

One feature of my invention is applicable to the maintenance of an electric light upon a draw-bridge without disturbance by the movements of the bridge.

20 In the accompanying drawings I have illustrated my invention as applied, first, to electric-railway crossings, and, second, to the crossing of an electric railway over a swinging or draw bridge spanning a stream.

25 In said drawings, Figure 1 is a fragmental plan view at the intersection of two of the rails of crossing electric-railway tracks, wherein the conductors are located below the surface of the ground, and showing by dotted lines said conductors and the method of
30 bridging the gap caused by the crossing or conflicting track. Fig. 2 is a sectional elevation taken on the line 2 2 of Fig. 1, and looking in the direction of the arrow. Fig. 3 is a
35 sectional elevation taken on the line 3 3 of Fig. 1, and looking in the direction indicated by the arrow. Fig. 4 is a longitudinal sectional elevation through a draw-bridge and its abutments, and showing my invention ap-
40 plied to electrically connect line-conductors upon the banks of the stream with the line-conductors upon the bridge. Fig. 5 is a plan view of a set of contacts circular in form; and Fig. 6 is a detail view of a trolley in impinge-
45 ment with one of said contacts, and the stem of which trolley is electrically connected with one of the conductors on the bank.

50 In said drawings, and referring particularly to Figs. 1 to 3, inclusive, A indicates a street-car rail of the Johnson type. B indicates a similar rail of a crossing track, the shaded part *a* indicating a slot or opening into a

channel beneath the head of the rail for one track, and the shaded part *b* indicating a similar slot into the channel for the crossing
55 track. C and D indicate, respectively, one wall of the slot and channel for the tracks A and B. Within each of these channels is secured a metallic conductor, such as the rails E F, which
60 are similar, but are assigned different reference-letters in order to distinguish between the crossing tracks, and traveling brushes or trolleys—such as G H—are moved in contact with the rails E F, respectively, and through suitable
65 connections transmit the current passing through the conductors E F to the motors on the respective cars. Now it is evident that when one of these traveling current-transmitting devices approaches a conflicting or
70 crossing track there must of necessity be a break in the conductor for each of the tracks or lines of way, and to bridge this gap is one of the objects of my invention. To do this I
75 connect the sections of the conductor E F by an insulated wire *e*, which is carried beneath the channel for the track B, and therefore clears the traveling brush or transmitting device for the crossing line of way. The break
80 in the conductor F is bridged by the insulated wire *f*, which is carried beneath the channel in which is secured the conductor and through which passes the current-transmitting device for a car traveling over the
rail A.

85 It will be observed by reference to Figs. 1 and 3 that a section of the conductors E and F is not in the electrical circuit, and these portions of the conductor are insulated and act as guides for the moving trolley or brush; otherwise they serve no useful purpose. This
90 break in the main conductors at the crossing prevents loss of current by induction caused by the dripping of water upon the guide-sections of the conductor through the slot.

95 In the application of the invention shown in Fig. 4 of the drawings the track-rails A are in alignment with track-rails B upon the bridge when the latter is closed against the passage of vessels upon the river, and beneath said track-rails are conductor-rails
100 similar to those shown in Figs. 1 to 3, inclusive. Now in order to move a car across the bridge it is necessary to span the gap at the points *x y*, and to do this I employ connect-

ing-wires *i*, which are joined to the line conductors upon opposite banks of the stream, and are thence carried along the banks and bed thereof to a central pier or abutment 5 I, and thence to the stem J of trolleys K, which are in contact with the circular contacts L, secured in the plate M upon the bottom of the bridge-timbers and rotating therewith when the bridge is swung. These circular 10 contacts are of course in constant touch with their respective trolleys, and it only remains to connect them with the bridge conductor, which is done by means of the wires *j*, said wires being carried to the outer ends 15 of the conductors to energize them throughout their length, and thereby insure the movement of the car over the bridge. The return-current is through wires *k* *l* and the rails A B.

By reference to Fig. 6 it will be seen that 20 the trolleys K are supported upon a coiled spring *k*, surrounding the stem J, and that said stems pass through apertures *j* in their supports. This is an important feature, because when a train passes on or off a draw- 25 bridge, turn-table, or other similar swinging structure the tilting or oscillation of the structure would tend to break the contacts. These springs insure the maintenance of the trolleys K in contact with the conductors L.

30 From the above description it will be apparent that neither swinging the bridge to an open position and then back, nor swinging it so its ends are reversed in position, nor turning it completely around, will break or disturb 35 the electrical circuit of which the conductors on the banks and upon the bridge are part, and thus is provided a simple and effective means of transferring cars across draw-bridges by the aid of electricity. It is also 40 apparent that an electric light may be maintained upon a swinging bridge by the means hereinabove described, and I consider this to be one of the embodiments of my invention.

I do not, of course, limit my invention to precise details of construction nor arrangement of parts. 45

I claim—

1. In a crossing for electric railways, the combination, with conductor-rails for each of the crossing-tracks, said rails having breaks 50 therein at the crossing and electrically connected by means of suitable connectors, of guide-rails for the current-transmitting device for the respective tracks, said guide-rails being interrupted at the crossing and located 55 in line with the conductor-rails and insulated therefrom, substantially as shown and described.

2. In electric railways wherein sub-surface conductors are employed, means for carrying 60 the current across draw-bridges, which comprises, in combination, line conductors upon the banks and upon the bridge, fixed contacts upon the central bridge-supports, contacts secured upon and movable with the 65 bridge and adapted to maintain constant contact with the fixed contacts, and connections between the line conductors upon the bank and bridge through said contacts, substantially as described. 70

3. In means for carrying electrical circuits across draw-bridges, the combination, with conductor-rails upon the banks and upon the bridge, of two sets of conductors, one upon the bridge and the other upon its support, 75 and adapted to maintain constant contact with each other, and one set electrically connected with the bridge-rails and the other with the bank-rails, and one set of said conductors being yieldingly sustained in contact 80 with the other, substantially as described.

WILLIAM OSNER.

Witnesses:

C. C. LINTHICUM,
E. L. HUBER.