(No Model.)

C. VOGEL.

CABLE RAILWAY CROSSING.

No. 450,117. Patented Apr. 7, 1891.

Fig. 1

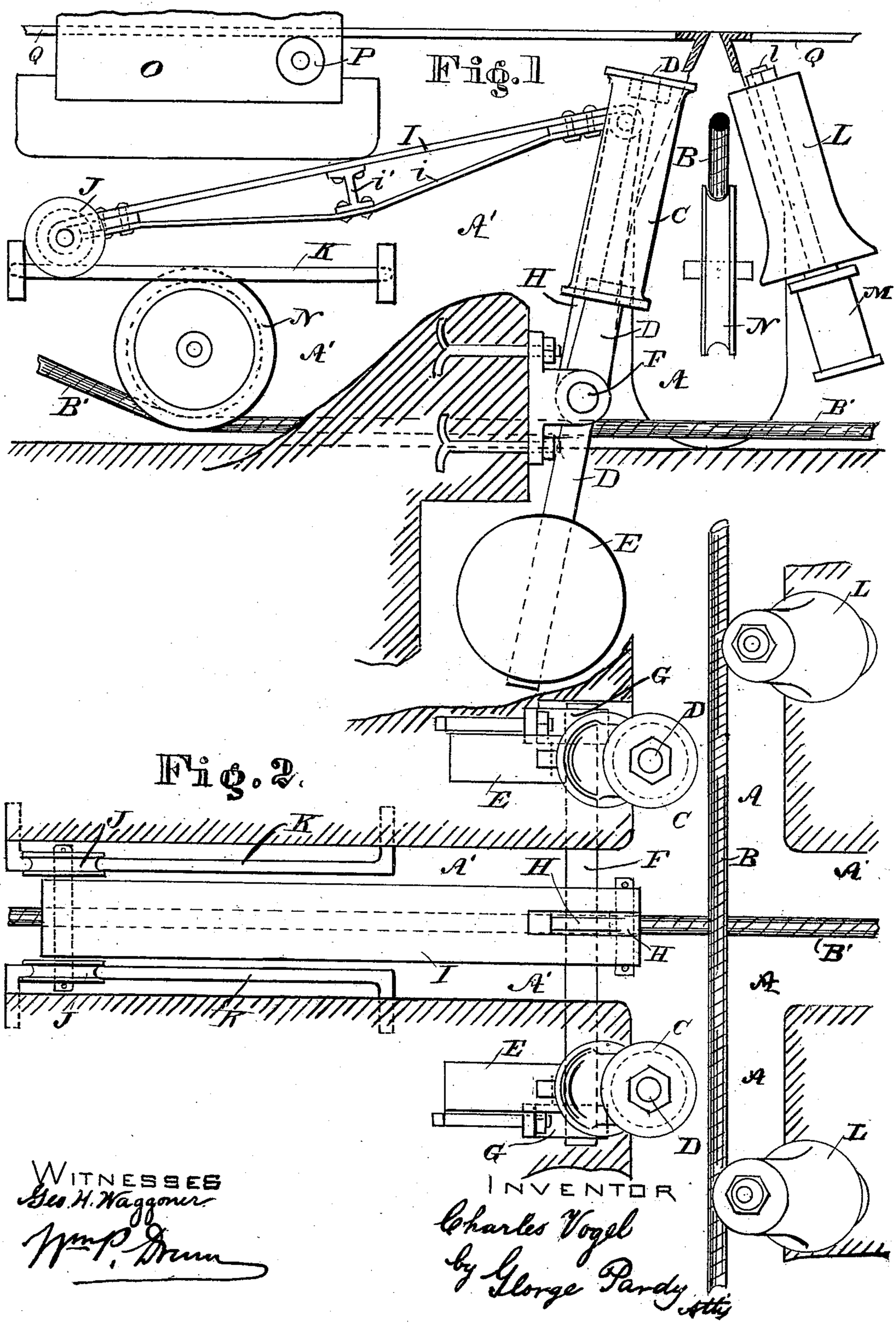

Fig. 2.

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CHARLES VOGEL, OF SAN FRANCISCO, CALIFORNIA.

CABLE-RAILWAY CROSSING.

SPECIFICATION forming part of Letters Patent No. 450,117, dated April 7, 1891.

Application filed May 9, 1887. Renewed April 7, 1890. Again renewed February 18, 1891. Serial No. 381,813. (No model.)
Patented in England September 29, 1887, No. 13,194.

To all whom it may concern:

Be it known that I, CHARLES VOGEL, of the city and county of San Francisco, State of California, have invented a Cable-Depressor for Use at Crossings Where Two Cable Railways Intersect Each Other, (for which Letters Patent of Great Britain, No. 13,194, dated September 29, 1887, were granted me,) of which the following is a specification.

The invention relates to railways using the underground cable system of haulage; and it consists in a peculiar cable-depressing device, by the operation of which one road may pass the grips attached to its cars over the cable of the intersecting line, which otherwise would occupy the path of said grips.

In the accompanying drawings, forming part of this specification, Figure 1 is a sectional elevation of two subways at the point of intersection, made so as to include a side view of the whole of the mechanism of the depression-pulley. Fig. 2 is a plan of the same.

In both figures the same letters of reference are used to indicate the same parts.

It sometimes occurs that the cable of a line cannot be permanently depressed by stationary pulleys below the path of a crossing-line's gripping attachments, because the cable is needed to propel the cars at the moment they pass that point; but it may be temporarily depressed to accommodate the passage of the grips of cars of a crossing line to be immediately restored to its proper position when the crossing car has passed. The herein-described automatic device is designed to accomplish the desired result.

A is the subway of a line running, let us say, north and south; A′, the subway of a line running east and west, the view being taken at the intersecting point. The north and south line has the upper cable B, which is the one to be operated upon, the cable B′ of the east and west line being permanently depressed at this point by stationary pulleys.

C C are depressing-rollers mounted on the upper ends of the levers D D, the lower ends of which carry the counter-weights E E. The fulcrum of these levers is a shaft F, supported by and slightly turning in the bearing-boxes G, which boxes sometimes will be anchored in the concrete walls of the subway or bolted to some part of the frame, as most convenient. The levers D D will be keyed upon the fulcrum-shaft.

H is an upright lever, also keyed upon the fulcrum-shaft and placed thereon between the two levers D D. This lever will not extend below the shaft and carries no counter-weight.

I is an inclined depressing-lever pivoted to the upper end of lever H and mounted on the wheels J at the rear end.

K K are a couple of round bars embedded in the concrete or masonry or fastened in any suitable way to the frame of the subway, as the case may be. They form a track for the wheels J to roll upon as they move forward in the act of depressing the lever I. The lever I may be trussed, as shown, with truss-rod *i* and brace *i′*, riveted to the main part of the lever, as shown.

L L are fender-rollers mounted on upright spindles *l*, projected upward on a slight inward angle from a firmly-fastened socket-piece M. The office of these rollers is to receive the thrust of the cable as it is pressed over and down and prevent it being thrown from off the carrying-pulleys N.

O is the grip of the car about to cross. It has at this point dropped its own cable and moves forward by gravity or momentum.

P is a roller secured to the grip-shank or other convenient place, either upon the grip or upon a separate frame pendent from the car, in such manner as to bear against the under side of the slot-iron Q should the upward thrust of the depressed cable tend to lift the car from the rails, a matter quite possible with very light cars, but not likely to occur if the cars be of average weight.

It is not absolutely necessary to employ two depressing-rollers or two fender-rollers, as shown in the drawings. One of each will answer every purpose in most cases. Both the depression-rollers and fender-rollers are held on their respective spindles by screw-nuts, as shown.

The operation is as follows: The car approaching the crossing must have first dropped its own cable, when, still advancing by momentum or gravity, its grip gently strikes the inclined lever I at a point midway of its

length, and depressing it throws over the attached lever H, turns the shaft F, and with it swings over and downward the levers D D, with the pulleys or rollers C C thereon secured, until said rollers bear the cable low enough down to permit the approaching grip to pass freely over it. Then as the grip, sliding along the lever I which has moved a few inches forward on its rear rollers, gradually passes entirely over and beyond the depressed cable, the latter will, of its own effort aided by the counter-weights E E, raise the depression-rollers to their normal position, and throw the lever I back to the starting-point, and the parts are then in position for a repetition of the operation. As the cable is pressed over it strikes the fender-pulleys and cannot be unshipped from its carrying-pulleys.

What I claim as my invention, and desire to secure by Letters Patent, is as follows:

1. In underground cable railways, the cable-depressor herein described, consisting, essentially, of the lever I, suitably supported at rear end, as by rollers running on a track or otherwise, lever H, pivoted thereto, shaft F, with bearing-boxes, lever D, with roller C, and counter-weight E, the whole arranged and operating substantially as and for the purpose described.

2. In underground cable railways, the combination of the inclined lever I, supported by and moving upon a track at its rear end, and suitable mechanism in connection therewith for depressing the cable, substantially as and for the purpose described.

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Witnesses:
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