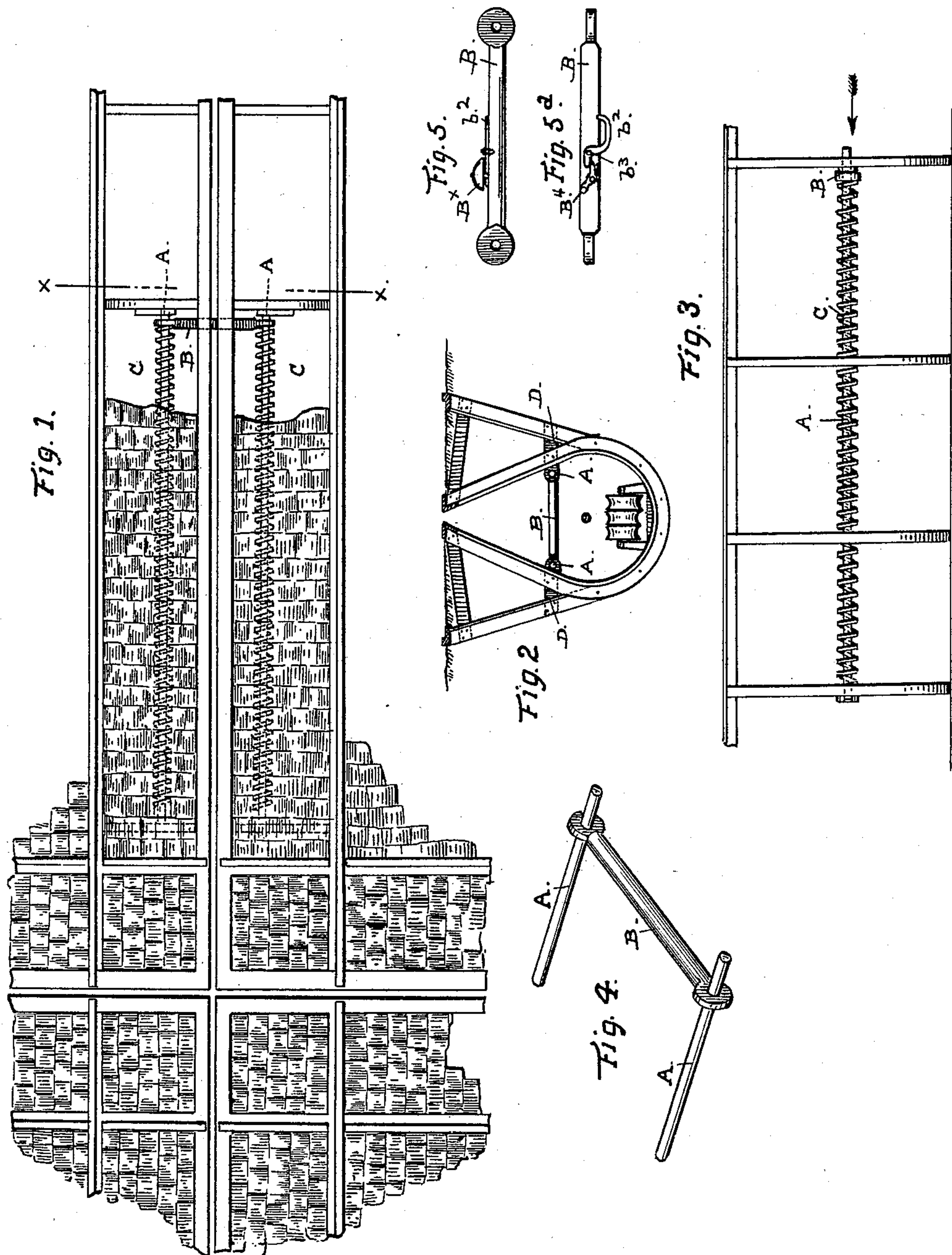


(No Model.)

H. E. POEHLMAN.  
BUMPER OR STOP FOR CARS OF UNDERGROUND CABLE RAILWAY  
CROSSINGS.

No. 498,215.

Patented May 23, 1893.



Witnesses:

M. Regner

William Franklin

Inventor:

Henry Edward Poehlman

By Smith & Osborn Attys.



# UNITED STATES PATENT OFFICE.

HENRY EDWARD POEHLMAN, OF SAN FRANCISCO, CALIFORNIA.

BUMPER OR STOP FOR CARS OF UNDERGROUND-CABLE-RAILWAY CROSSINGS.

SPECIFICATION forming part of Letters Patent No. 498,215, dated May 23, 1893.

Application filed May 11, 1892. Serial No. 432,561. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY EDWARD POEHLMAN, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented certain new and useful Improvements in Bumpers or Stops for Cars of Underground-Cable-Railway Crossings, of which the following is a specification.

In constructing and operating street railways under what is known as the underground-cable system it is the practice at the present time to protect the cable of one road from being cut or injured by the car grip on the cable of an intersecting road through carelessness of the gripman by fixing a rigid, unyielding stop in the form of a heavy rod or bar, commonly termed a bumper, in the cable-tube across the path of the grip at some point in advance of the crossing, so that in the event of a gripman on the line of the lower cable neglecting to throw off the cable and raise the grip to clear the upper cable while making the crossing the stop-bar or bumper will present an unyielding obstacle to the further progress of the grip before the crossing-point is reached. This operation, however, is attended by considerable danger to the passengers as well as to the man at the grip, and in several cases of a sudden stop by contact of a grip with the bumper persons riding on the car have been seriously injured.

As an improvement on these devices or bumpers my invention has for its object to provide a stop for cable-crossings that will operate without danger to the occupants of the car; and to such end and purpose I construct and apply substantially in the manner hereinbefore described a yielding stop or bumper at the crossing of two cables in the tunnel or cable-way of the lower cable to protect the other cable which has the right of way.

The nature of this improvement consists in constructing and combining in and with the cable-way at a crossing a stop-bar having a yielding and to a limited extent a sliding movement in the direction in which the grip travels in such a degree that when struck by a grip it will first check the momentum and then bring the grip gradually and not abruptly to a stop before the crossing is reached, as hereinbefore more fully described.

The accompanying drawings that form part of this specification represent the manner in which I construct and apply my improved device, reference being had to it by letters.

Figure 1 is a top view or plan of a cable-crossing with my device set in place; the surface of the roadway being represented as partially broken away to expose the parts beneath. Fig. 2 is a vertical transverse section at about the line  $x x$  Fig. 1. Fig. 3 is a side elevation of the iron frame-work or skeleton of the road-bed. Fig. 4 is a perspective view of the stop bar and a portion of the guide rods upon which the stop bar operates. Fig. 5 is a front view and Fig. 5<sup>a</sup> a top view of the stop-bar with a signal bell mounted for operation on it.

In constructing my device I fix within the cable-way or tunnel on opposite sides of the cable and about parallel with it, two long rods A A, and on these rods I set a short heavy rod or bar B, across the tunnel either in position above or below the cable and directly in the path of the grip. If set below the cable it should be at such height from the bottom of the tunnel that the foot of the grip shall strike it when the cable is in the jaws of the grip. A bell or gong B<sup>x</sup> is fixed on the cross-bar B, with a tripping lever b<sup>2</sup> pivoted on the bar at b<sup>3</sup> and projecting in front to take the first contact of the grip-bar; when the cross-bar is struck the lever is pressed back and by tripping the hammer B<sup>4</sup> of the gong the same is caused to give warning to the gripman.

C C are heavy spiral springs on the guide-rods in front of the bar B and bearing at one end against the bar, and at the opposite end against a fixed point. The ends of the bar are suitably formed to embrace and slide on the guide rods A. The springs C which surround the rods A bear upon the ends of the stop bar and press it against the bracket pieces D, whereby the stop bar is always held in position ready to receive the impact of the grip-iron, should the gripman fail to throw the grip from the cable. The rods A are supported by arms or bracket pieces D fixed to the yokes or frames of the tunnel, or by any other suitable support fixed in the tunnel to carry them.



In place of spiral springs it will be obvious that air or liquid cushions such for example as a piston moving in a liquid cylinder could be applied to give a yielding resistance of the bar to the movement of the grip at the time of contact. I prefer the construction herein described and shown, however, because of its simplicity and durability.

In practice as the gripper attached to the dummy or car approaches the bumper, should the gripman fail through neglect or carelessness to release the grip from the cable of his line the grip iron or bar will strike the cross-bar B of the bumper and give the alarm by the contact and this shock will also cause the gong or bell on the cross-bar to sound additional warning and give the gripman time to release and lift the grip-bar before the springs of the bumper are compressed to their fullest capacity.

Having thus fully described my invention,

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

1. In a cable railway a stop or bumper consisting of guide rods supported in suitable bearings, a stop bar on said rods, and a spring for holding said stop bar in position and independent of the cable to receive the impact of the grip-iron, as set forth. 25

2. In a cable railway the combination at a cable-crossing of the guide-rods, sliding stop bar movable on said rods, and springs applied in front of said stop-bar and an alarm bell or gong connected therewith, substantially as described to operate as set forth. 30

In testimony that I claim the foregoing I have hereunto set my hand and seal. 35

HENRY EDWARD POEHLMAN. [L. S.]

Witnesses:

C. W. M. SMITH,

CHAS. E. KELLY.