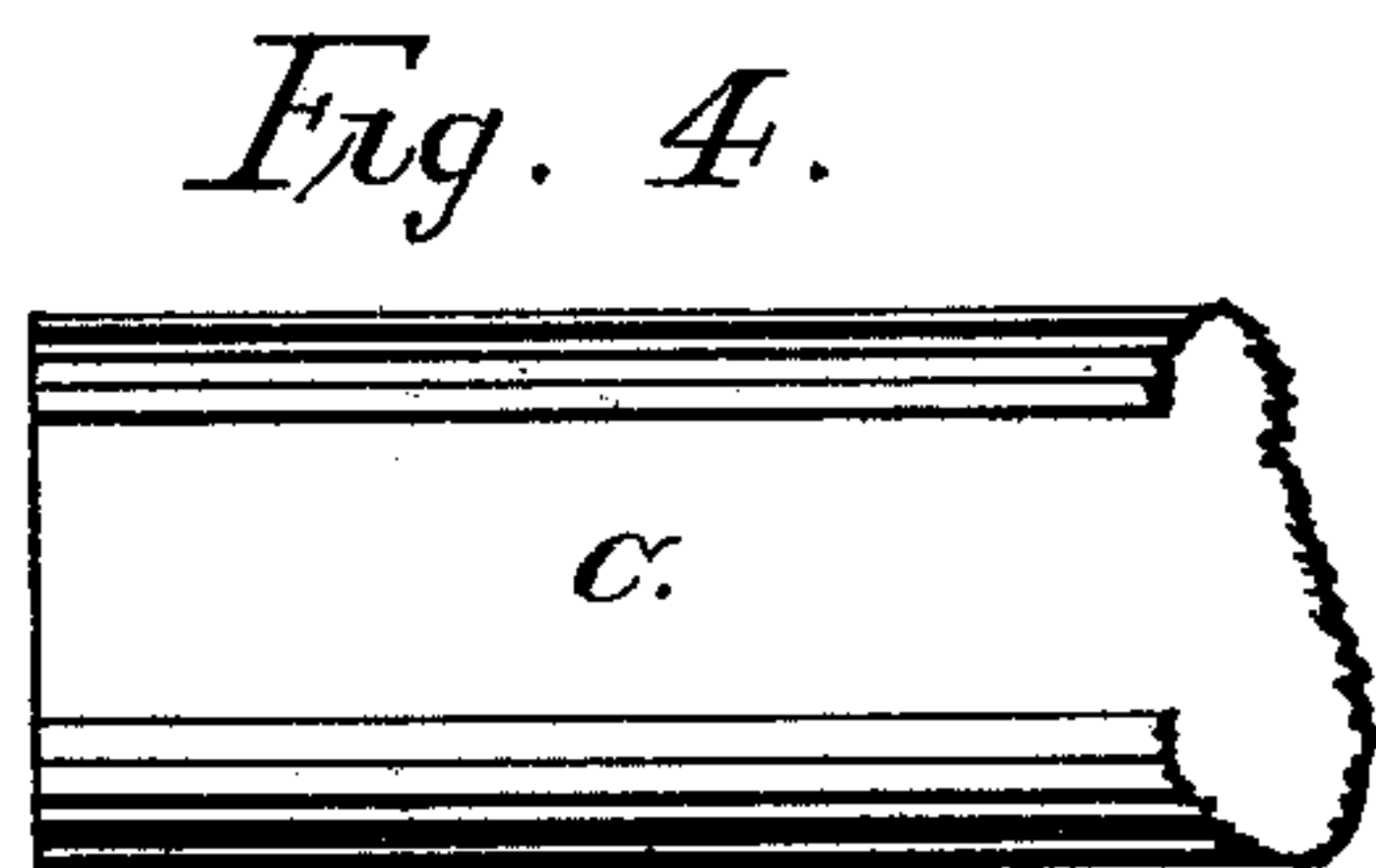
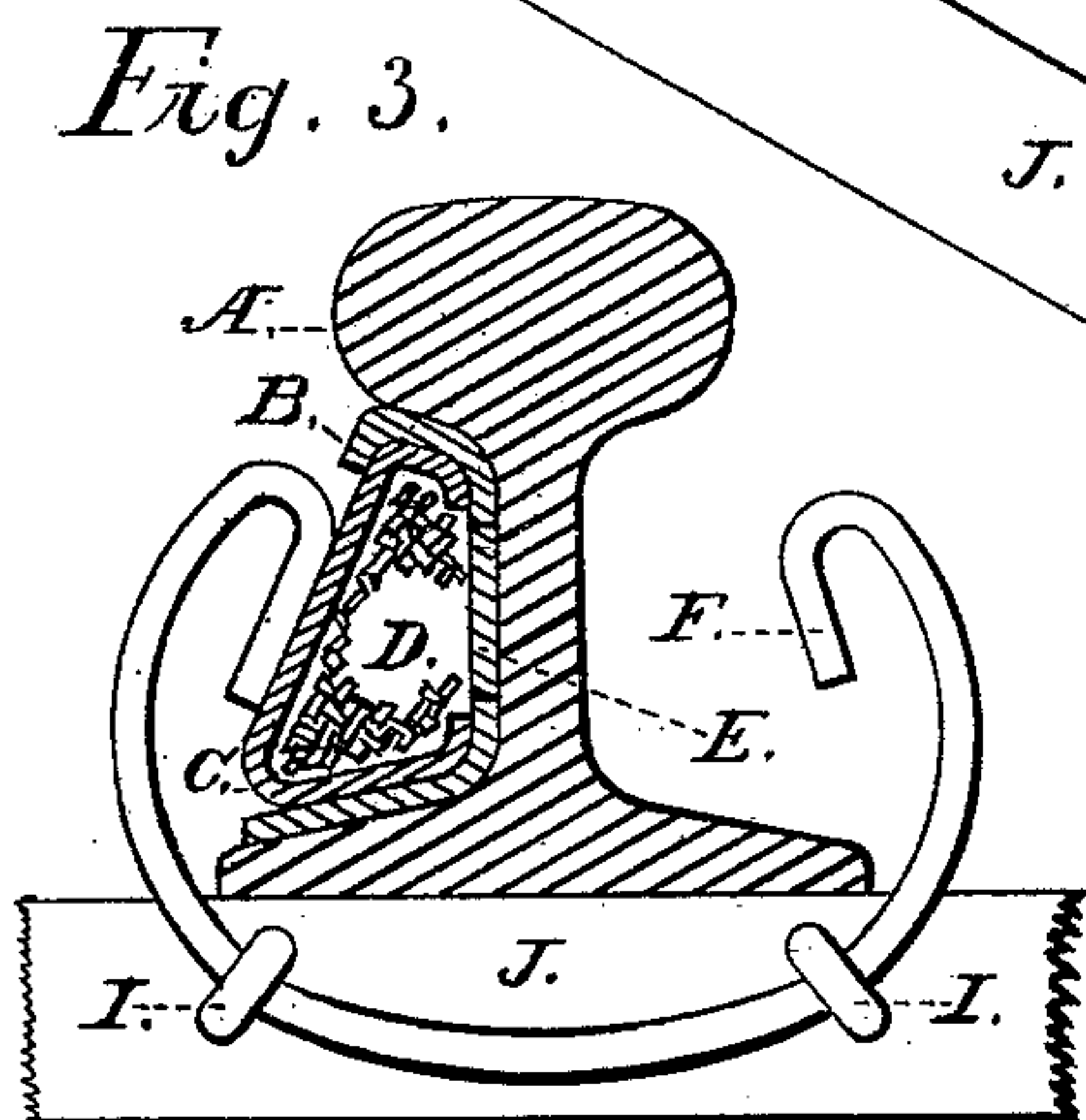
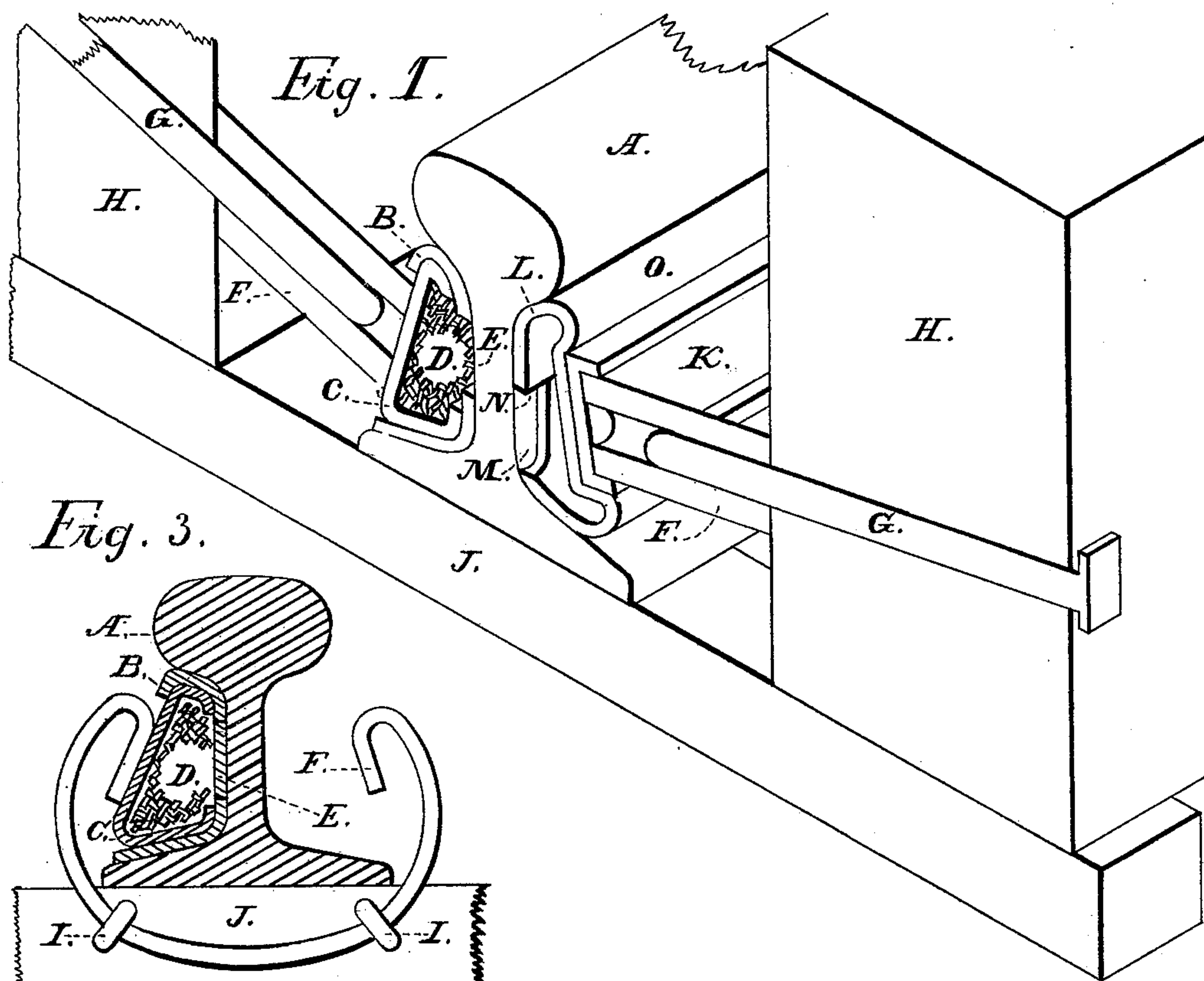


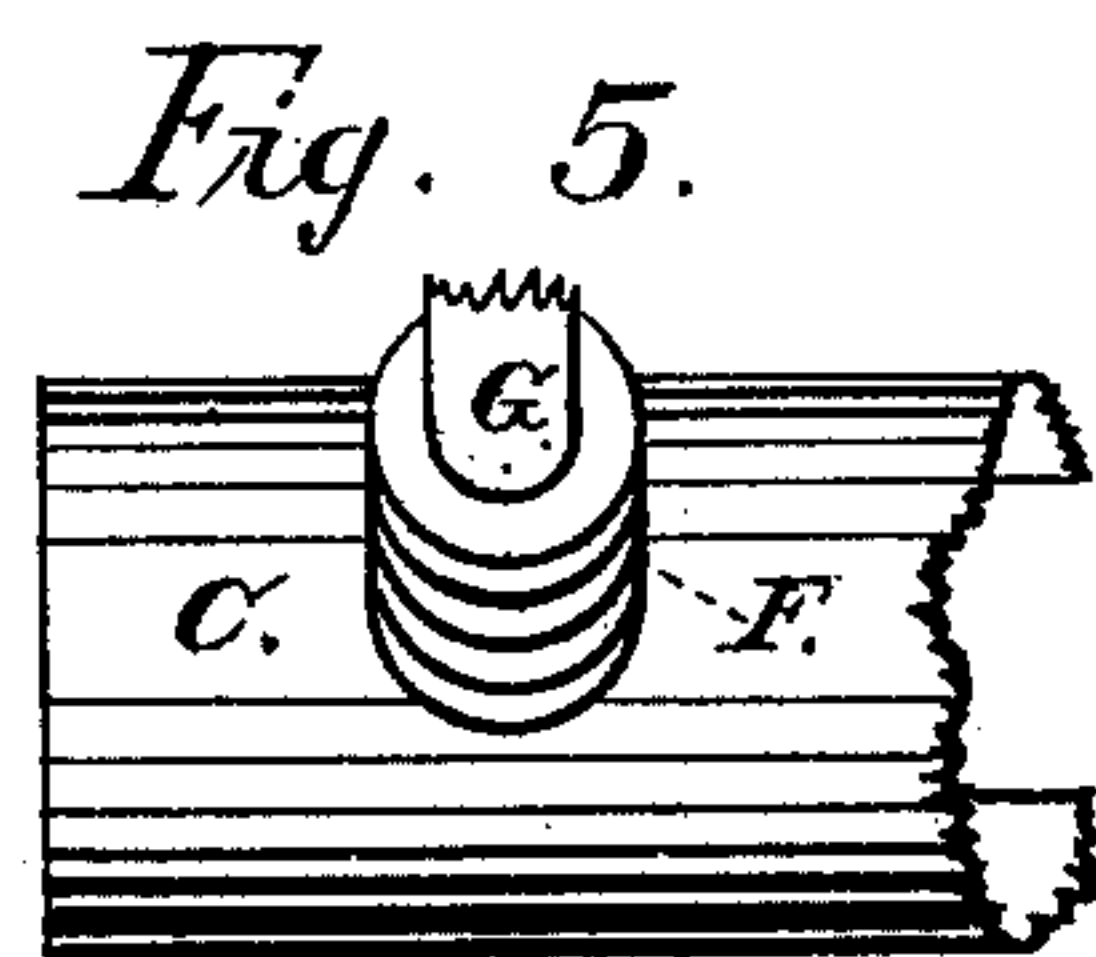
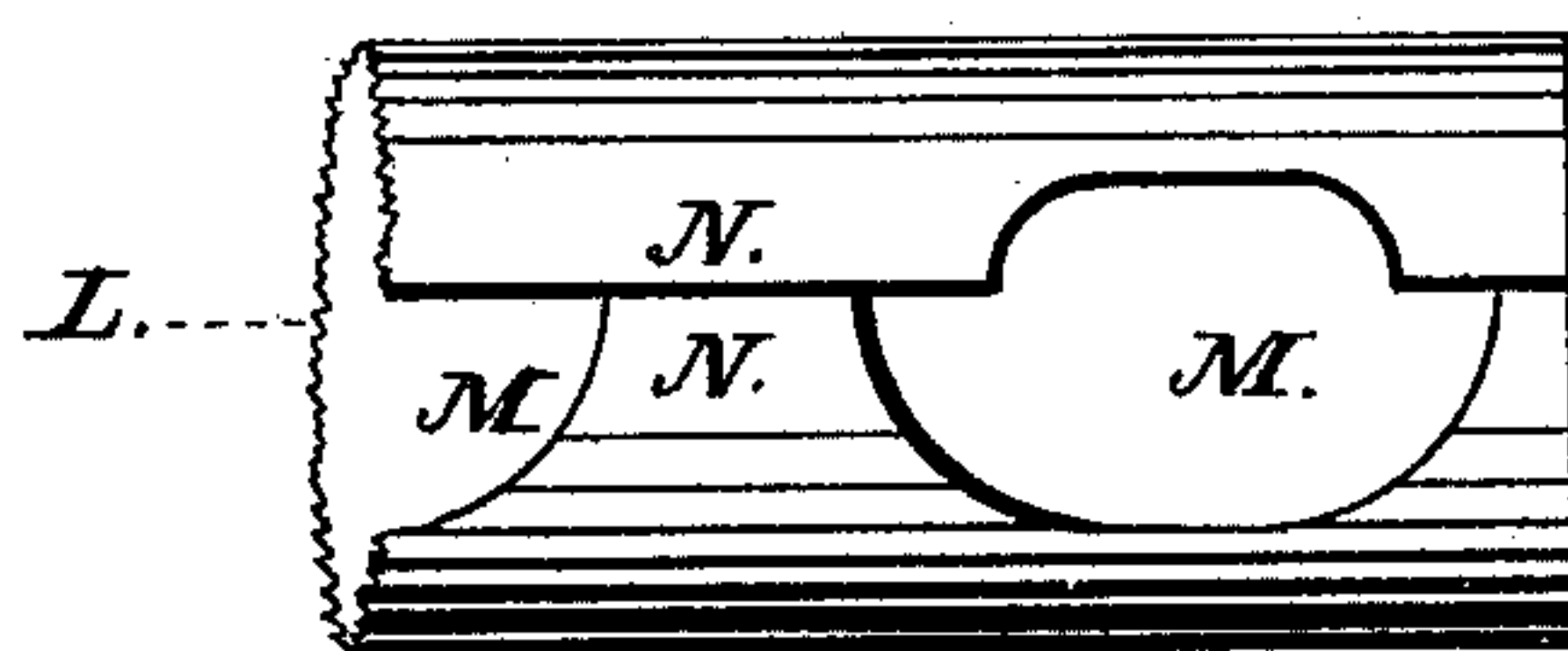
G. E. BENDIX.  
Deadenening Noise on Elevated Railroads.

No. 222,230.

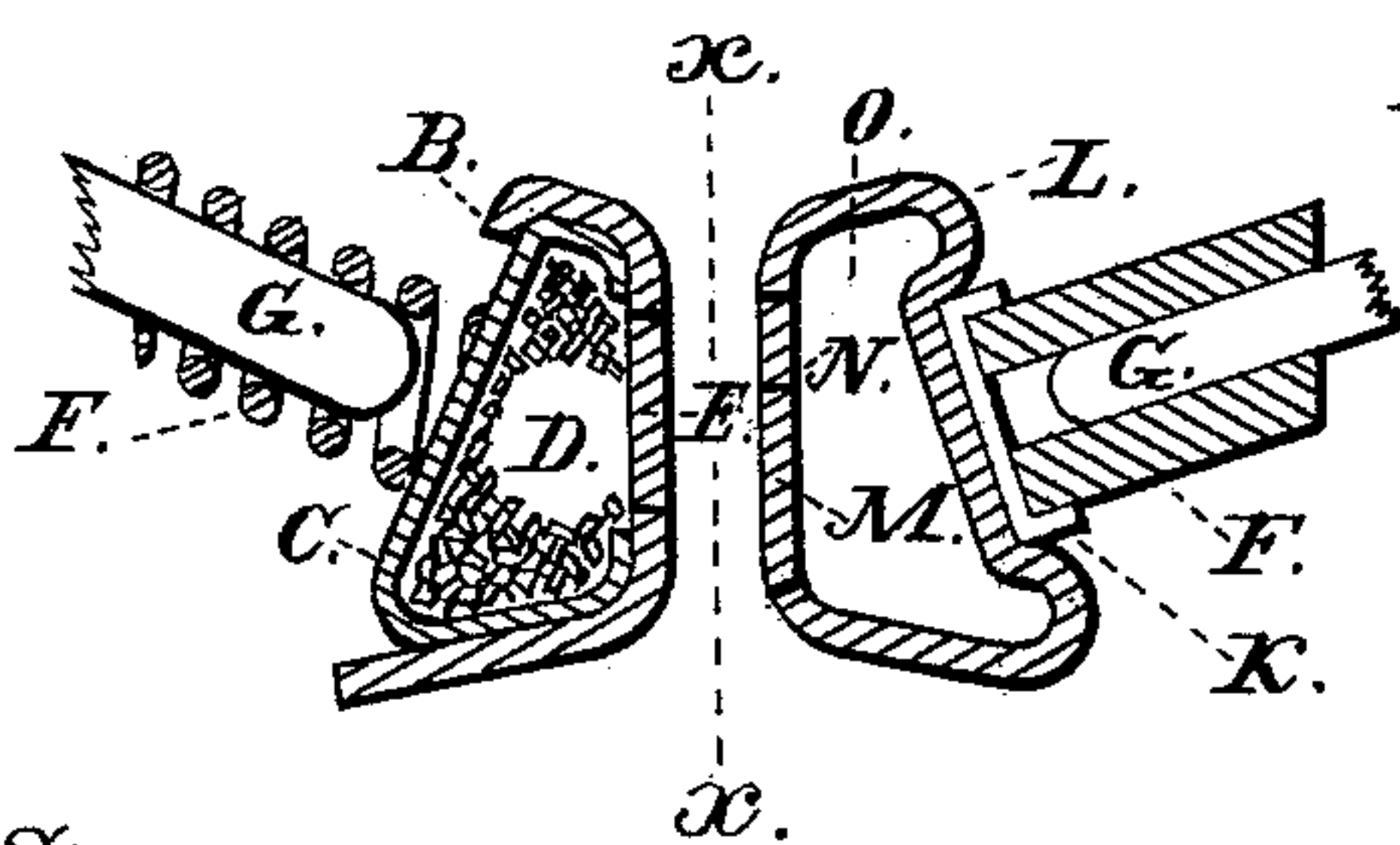
Patented Dec. 2, 1879.



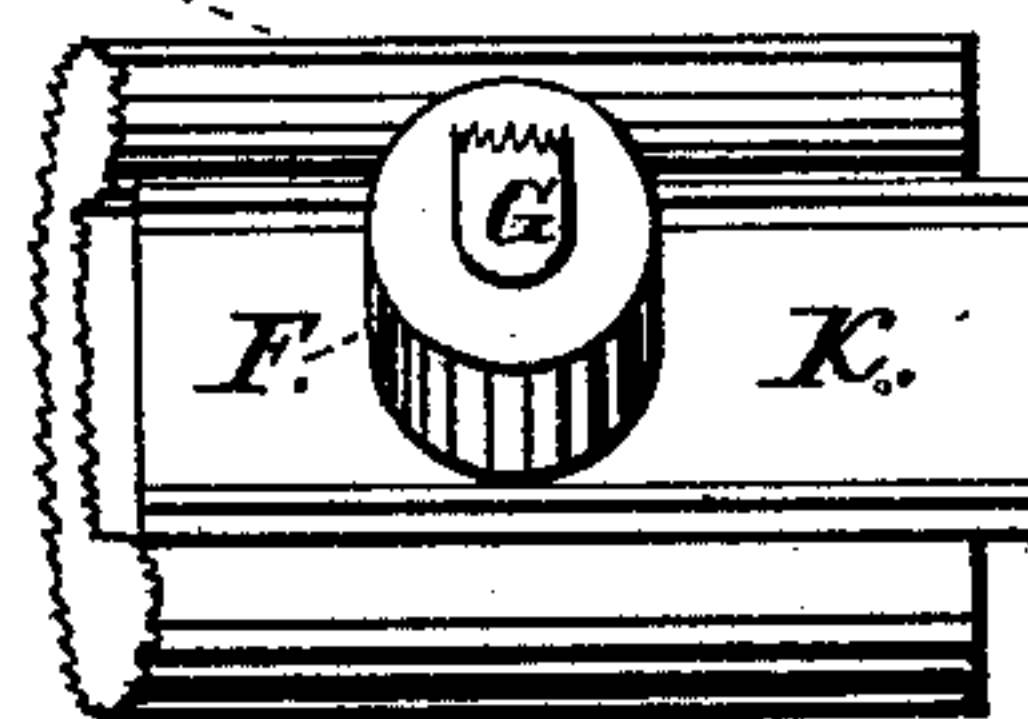
*Fig. 7.*



*Fig. 2.*



*Fig. 6.*



Witnesses;  
Smith Richards.  
W. H. Pottelbaum.

Inventor;  
George E. Bendix.



# UNITED STATES PATENT OFFICE.

GEORGE E. BENDIX, OF BROOKLYN, NEW YORK.

## IMPROVEMENT IN DEADENING NOISE ON ELEVATED RAILROADS.

Specification forming part of Letters Patent No. 222,230, dated December 2, 1879; application filed March 24, 1879.

*To all whom it may concern:*

Be it known that I, GEORGE E. BENDIX, of the city of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Sound-Arresting or Noise-Deadenng Devices for Elevated Railways, of which the following is a specification.

The invention relates to sound-arresters or noise-deadeners for elevated railways.

Heretofore other devices that have been tried for this purpose have been found to be objectionable for the following reasons: first, that no provision has been made for the expansion and contraction of materials used; second, that the material used is not held automatically against the rail to compensate for the jar of the train passing over it; therefore it allows incompact material to fall away from the rail, and compact material to shrink and withdraw from the rail; third, that the space between the base of the rail and the guard-rails has been obstructed, leaving no opening for the free passage of snow, ice, and dirt, which must necessarily accumulate, thereby rendering the road inoperative; fourth, that no provision has been made for the ready and inexpensive removal and replacement of materials used when repairs to the road are found necessary.

The object of my invention is to provide a practical device for arresting or deadening the sound or noise on elevated railways, which will overcome all objections experienced in other tried devices.

The invention consists in the arrangement of the sound-arresting tubes, whereby sound or noise is transmitted and arrested or deadened within the tubes.

It also consists in holding the same automatically in their positions; and it finally consists in the particular construction and arrangement of the tubes and mechanism, whereby they are held automatically in their positions.

In the accompanying drawings, in which similar letters of reference indicate like parts, Figure 1 is a perspective of a device embodying my invention. Fig. 2 is a sectional end elevation of the same. Fig. 3 is another end elevation with a modified spring for holding the sound-arresting tubes against the rail and

having said tubes removed from one side of the rail. Fig. 4 is a longitudinal view of the metallic portion of the tube used on that side of the rail where the flanges of the wheels operate, as seen from the line *xx*, Fig. 2, looking toward the spiral spring. Fig. 5 is a longitudinal view of a portion of the same, showing the position of spiral spring and bolt, looking toward the line *xx*. Fig. 6 is a longitudinal view of a portion of the material forming a tube on the opposite side or outer side of the rail, and showing the position of the keeper, rubber spring, and bolt, looking toward the line *xx*; and Fig. 7 is a longitudinal view of a portion of the same, showing the perforations formed by placing the edges of the material together, as seen from the line *xx*.

Within the recess of the rail A, on that side of the rail on which the flanges of the wheels operate, is placed a strip of perforated non-sound-conducting material, B, (sheet-rubber being preferred,) which shall be a little wider than is required to cover the recess of the rail. The metallic portion C is then placed against the strip of perforated rubber B, the two forming the tube O within the recess of the rail.

The springs F, which are sustained by the bolts G, (said bolts passing through the guard-rail H,) or by staples I, driven into the ties J, hold the tubes automatically against that side of the rail. On the opposite side of the rail, or that side on which no flanges operate, the device, which may be much larger, consists of perforated rubber hose, or of a strip of non-sound-conducting material, L, having portions cut out of its edges N, which, when folded together to form the tube O, also form the perforations M. This strip or tube O is placed with its butting edges N and perforations M against the rail A, within the recess, the springs F, sustained by the bolts G, (said bolts passing through the guard-rail H,) or by the staples I, driven into the ties J, holding the keeper K against the tube O and securing the whole automatically against the rail A.

If desired, the interior of the tubes may be filled with a non-conductor of sound, D.

The operation of the device is as follows: When sound or noise is created by the vibration of the air caused by the concussion of the wheel and the rail, it is transmitted from the



rail into the tubes through the perforations, where it is retained, but allowed to circulate longitudinally, until the vibrations have ceased. The tubes, being constructed wholly or in part of non-sound-conducting material, render the rail non-sonorous. The tubes form so close a union with the base and tread of the rail that no water or moisture can possibly enter them.

What I claim is—

1. The combination of a rail having recesses in its sides with one or more tubes formed wholly or in part of non-sound-conducting material held within said recesses, substantially as described.

2. The combination, with a rail, of one or more tubes and springs for holding the same against the rail, as set forth.

3. In combination with the rail, the tubes O, the keeper K, and the springs F, supported by the bolts G or staples I, substantially as described.

GEORGE E. BENDIX.

Witnesses:

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