

(No Model.)

M. RILEY.
BELL ROPE.

No. 369,738.

Patented Sept. 13, 1887.

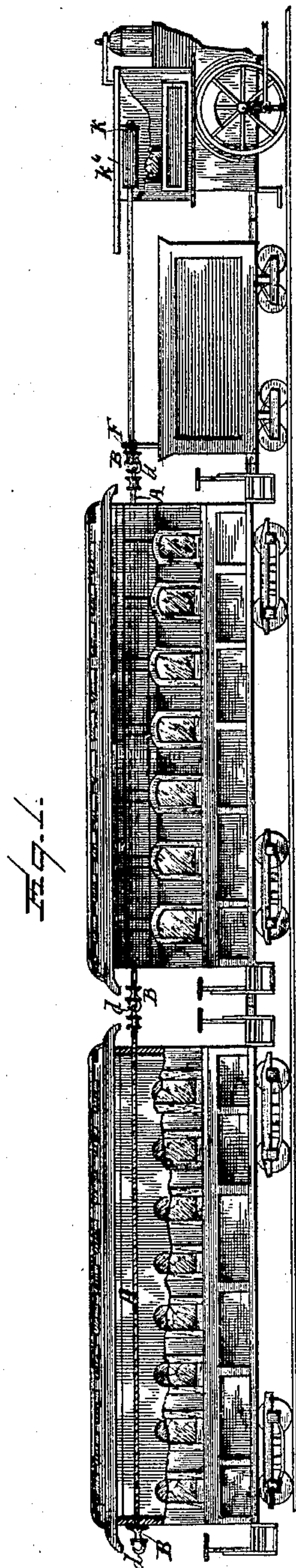


Fig. 1.

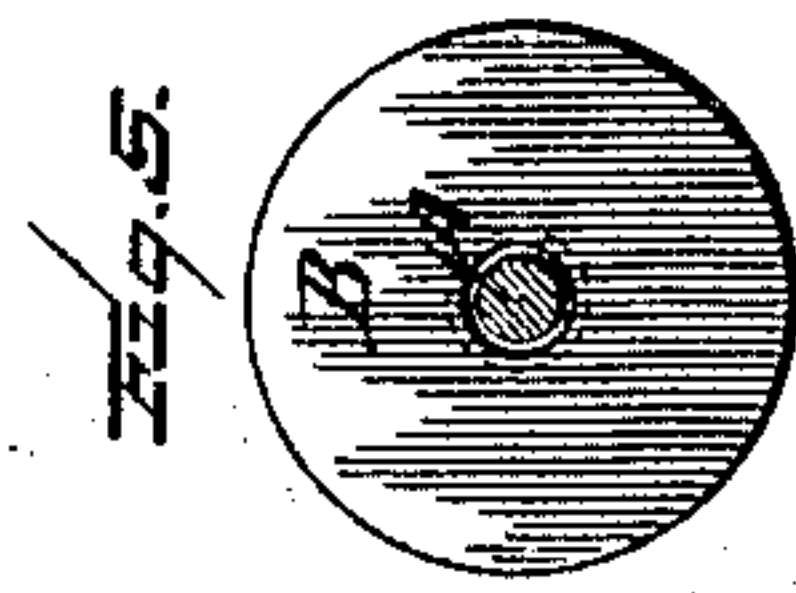


Fig. 5.

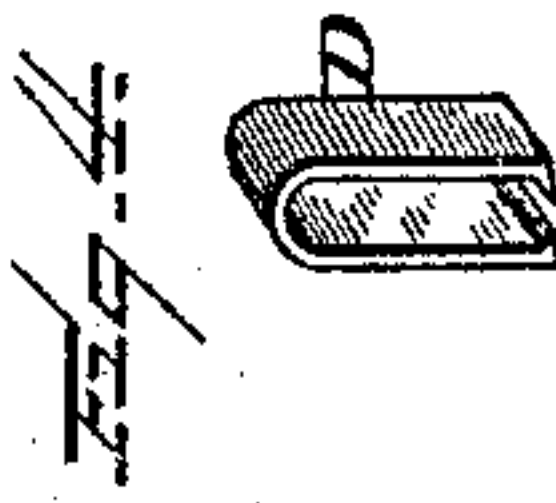


Fig. 4.

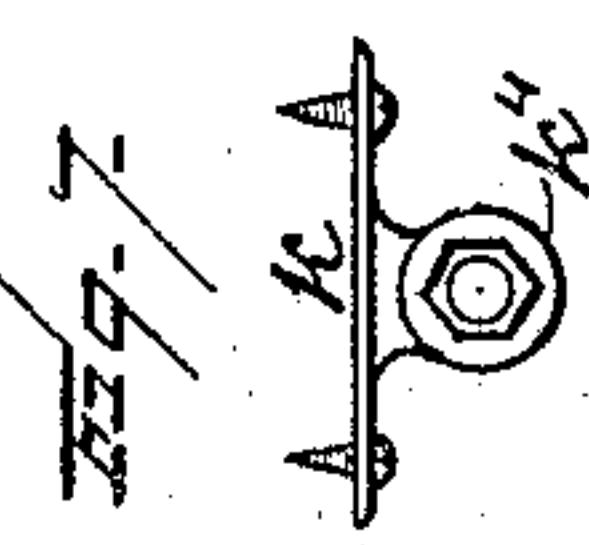


Fig. 7.

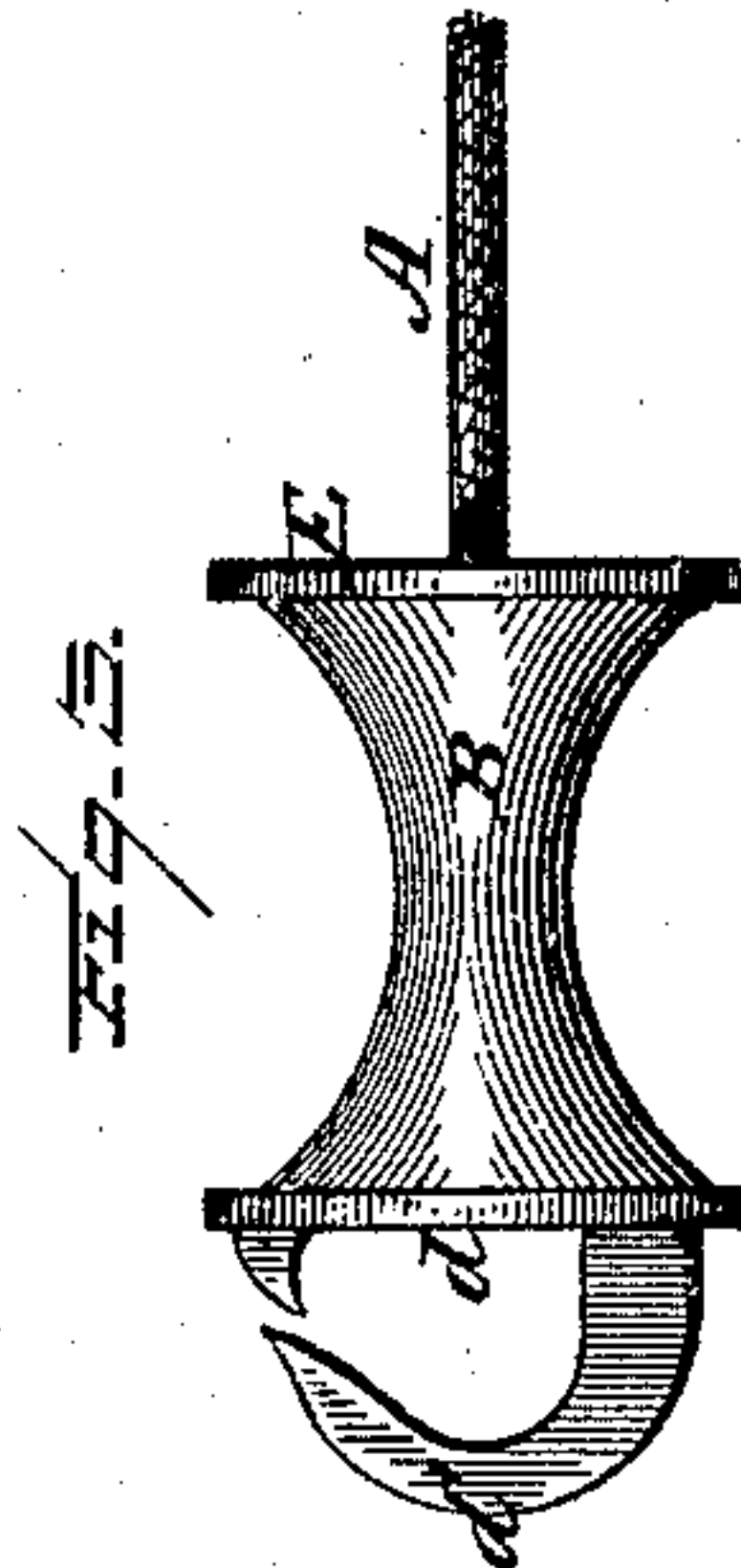


Fig. 3.

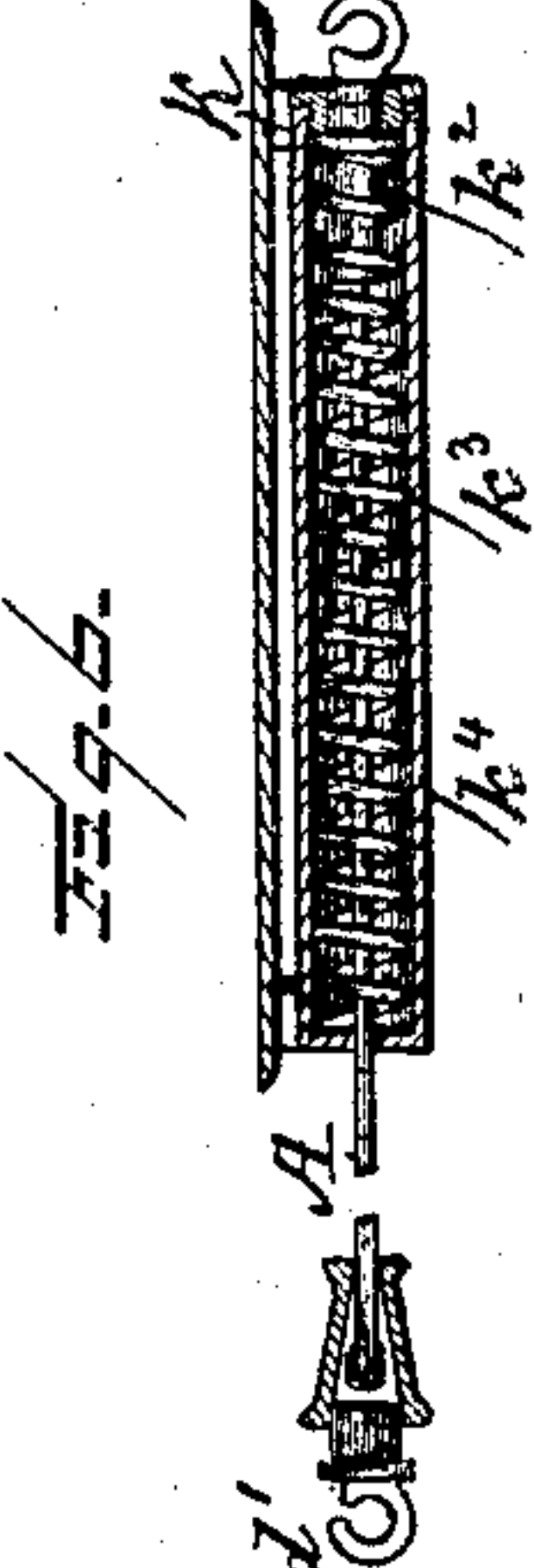


Fig. 6.

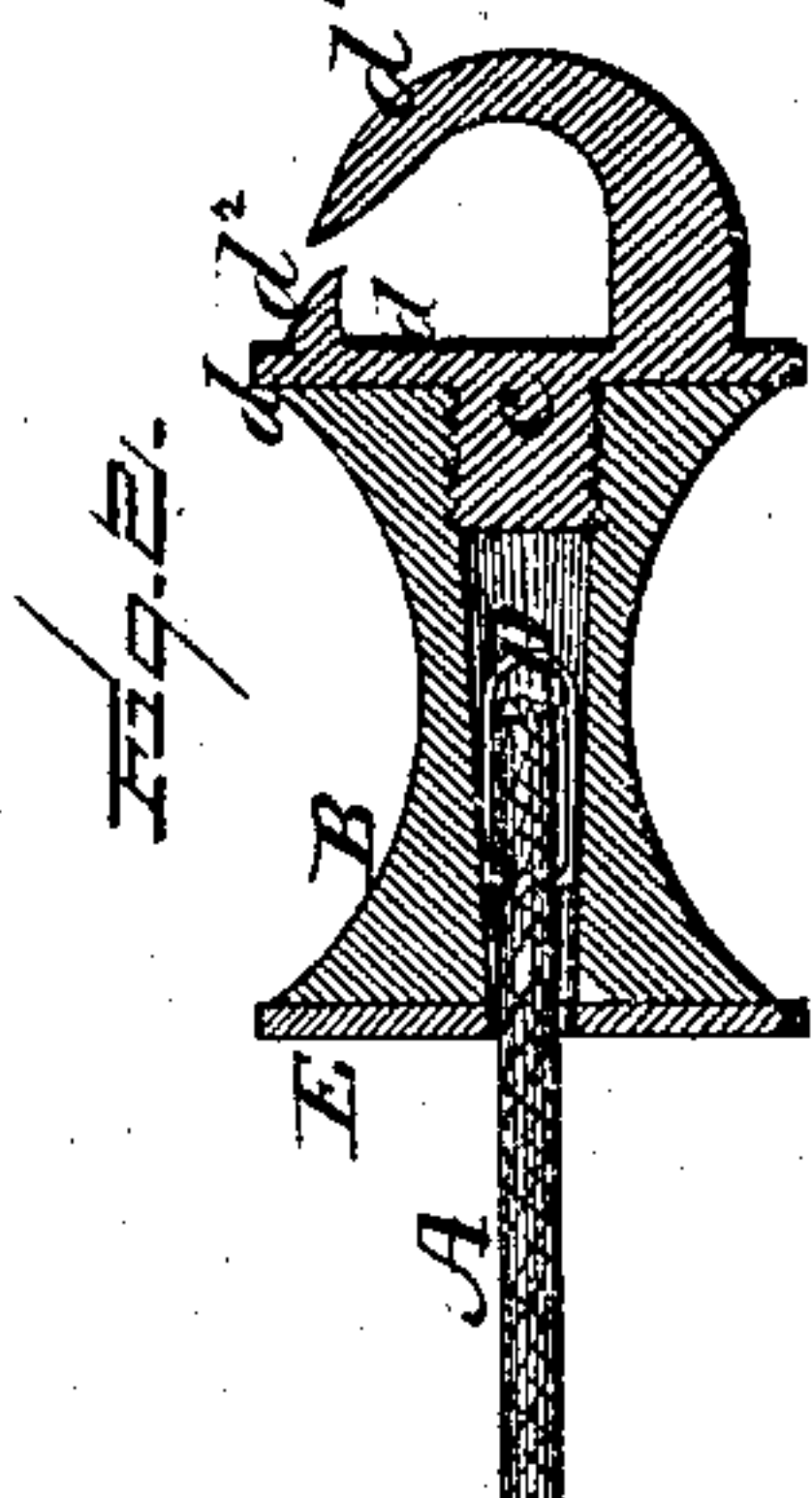


Fig. 2.

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UNITED STATES PATENT OFFICE.

MICHAEL RILEY, OF LONDON, OHIO.

BELL-ROPE.

SPECIFICATION forming part of Letters Patent No. 369,738, dated September 13, 1887.

Application filed May 7, 1887. Serial No. 237,484. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL RILEY, a citizen of the United States, residing at London, in the county of Madison and State of Ohio, have invented a certain new and useful Improvement in Bell-Ropes, of which the following is a specification.

My invention relates to the improvement of conductors' bell-ropes.

The objects of my invention are to provide each car of a train with a permanent section of bell-rope formed of such material and provided with such attachments as to prevent the sagging of the rope within or without the car when the connecting-hooks between two car-ropes are disconnected, to provide an effective connecting-hook between the rope ends, and to provide a neat, simple, and safe connection of the rope ends and connecting-hooks. These objects I accomplish in the manner illustrated in the accompanying drawings, in which—

Figure 1 represents two cars, a tender, and engine-cab connected by my improved rope. Fig. 2 is a sectional view of one of the hooks and its connected rope-holding tube. Fig. 3 is an elevation of said hook and tube. Fig. 4 is a perspective view of the rope-locking piece. Fig. 5 is an end view of the rope-holding tube. Fig. 6 is a view in section of the rope's-end-holding device for attachment to the engine-cab, and Fig. 7 is an end view of the same.

Similar letters refer to similar parts throughout the several views.

A represents my improved bell-rope, which is formed of rubber having the desired degree of elasticity, said rope being solid or composed of rubber tubing. Each car is provided with one of said ropes, the ends being made to pass and project in the usual manner through rope-holes formed in the ends of the car.

B represents the rope-end-holding tube, one of which is secured, as hereinafter described, to each end of each of the ropes.

Each of the rope-holding tubes B has its ends flaring or slightly enlarged, as shown, and has its central longitudinal passage tapering toward its rear end to form a slightly-conical hole therein. The front portion of said conical hole has its surface screw-threaded, to receive a short screw, *c*, made to project from the rear side of a metallic head, *d*, adapted to bear against the head of the tube B. Formed

with the head *d*, and made to project forwardly and rearwardly from one side of said head to form a hook, is an arm, *d'*, the outer end of which is formed exceedingly thin and slightly pointed, and extends to within a short distance of a thin pointed lug, *d''*, the latter being formed with and made to project forwardly from the opposite side of said head.

The end of the bell-rope A having first been inserted through a close-fitting washer, E, of rubber or other suitable soft or flexible material, it may be secured within the rope-holding tube as follows: The end of the rope is first passed through the conical hole of the tube from the rear end thereof. A small clamping-piece, D, consisting of a thin strip of steel or other similar material bent at the center of its length until its halves are parallel, and having its ends bent toward each other, is then made to embrace the end of the rope, the bent ends of the piece D clutching the rubber, as shown in Fig. 2 of the drawings. The rope is then drawn backward into the tube until the clamping-piece D becomes fixed between the tapering walls of the passage, which will be caused by the gradually-decreasing size of said conical passage. The screw *c* of the hook may then be screwed into the head of the tube, and the washer E made to bear against the rear end thereof.

Each of the ropes A is formed of such length and with such degree of elasticity as, when not connected with adjoining cars, to hold the portion of the rope within the car taut and to cause the washers E to bear against the ends of the car about the rope-holes, said washers being too large for entrance there-through. Each of the ropes has, however, sufficient elasticity to admit of its being stretched the desired distance away from each end of the car to form a connection with the bell-rope of the adjoining car, which is accomplished by bringing the hooks of two car-ropes toward each other and engaging them by passing the thin pointed end of one of the hook-arms *d'* between the corresponding arm and the point of the lug *d''* of the other hook.

Made to extend upwardly from the top of the tender at its rear end is an arm, F, having its upper end bent to form an open hook, through which the bell-rope passes to the engine-cab, where it is connected in any well-

known manner with the bell-tapper, and has its front end beyond the point of connection with the bell secured to an arm, k , depending from the ceiling of the cab, where a metal spring may be added. One of the above-described connections of the bell-ropes is made between the front end of the front car and the hooked tender-arm F.

By the use of my improved bell-ropes, arranged and connected as described, it will readily be seen that each car is provided with a permanent bell-rope, and that said ropes are always taut and in convenient position for connection. It will also be seen that by my improved means of attaching the ropes to the rope-holding tubes of the connecting-hooks a safe and simple attachment of said parts is attained, and that old ropes may readily and easily be detached from their hooks and new ropes substituted with but small labor.

The rope-holding tubes having flaring ends or shoulders, as described, affords a convenient hand-hold while making the connection.

In case it is desired to remove the rope from above the tender while loading the latter, it may be readily done by first disengaging the rope-hooks at the front end of the front car, and then lifting the rope from its seat in the hook of the arm F.

In case one of the ropes, by reason of a failure to disengage the hooks when the cars are uncoupled, should be broken, the rope may be readily repaired by securing, in the manner

above described, one of the above-described rope-holding tubes to each of the broken ends, and by having one of said tubes provided, as above described, with a screw-threaded socket and the corresponding end of the other tube provided with a screw similar to the screw of the above-described hook, and screwing said parts together. The end entering the cab may also be attached to a plug, k^2 , bearing against a metal spring, k^3 , inclosed in a tube, k^4 , to increase the retractive power of the rope.

Having now fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In combination with a car bell-rope composed of elastic rubber and adapted to be permanently retained united to a car, the tubes B, having a tapering hole therein and a hook secured thereto, substantially as and for the purpose described.

2. In a bell-rope attachment, as described, the combination of a rope-holding tube having flaring ends and a central conical passage, a hook detachably secured to one of said ends, and a metallic spring-strip adapted to clasp a rope and bind within said passage, with an elastic rubber rope, substantially as and for the purpose described.

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Attest:

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