

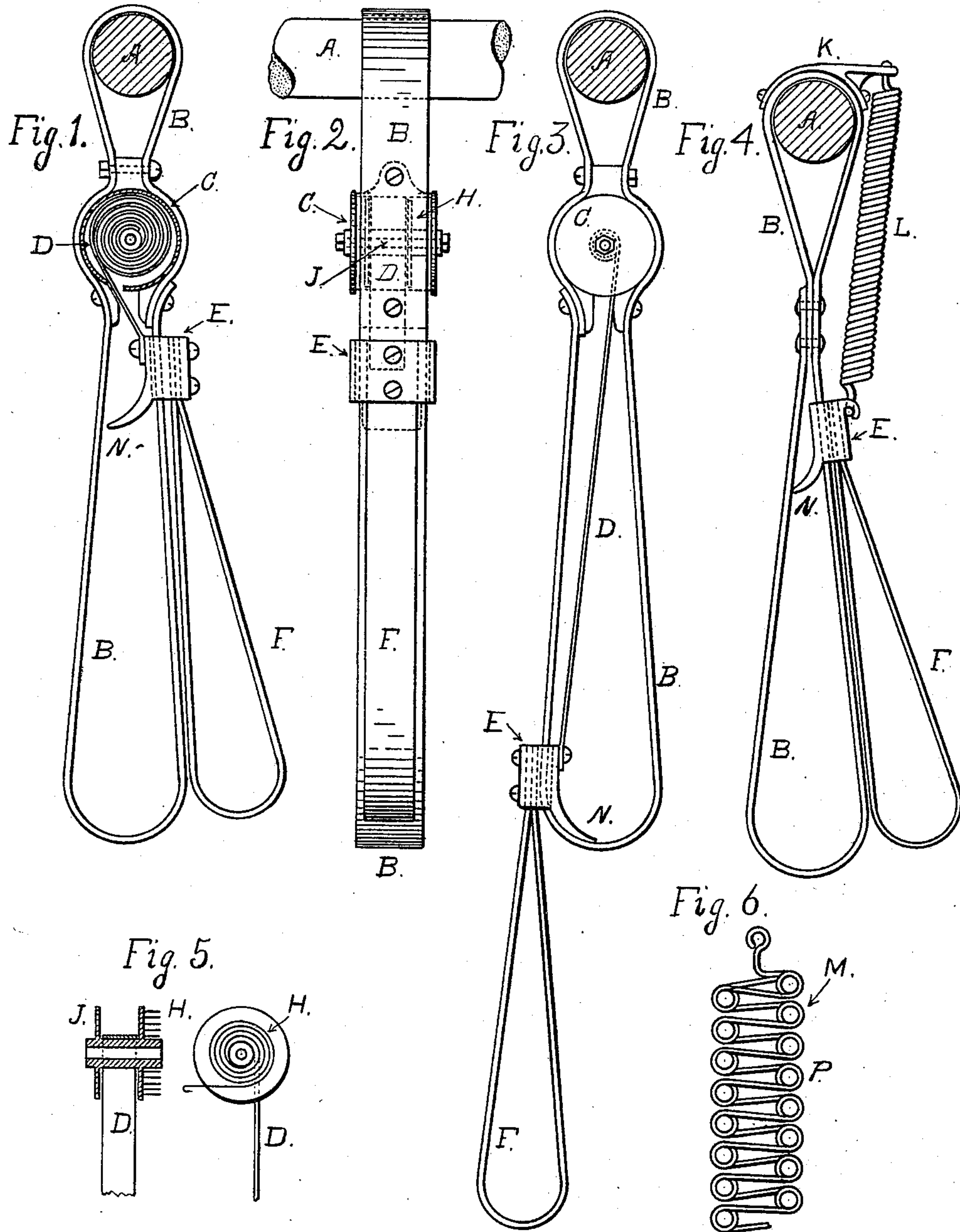
No. 607,592.

Patented July 19, 1898.

W. R. SANDS.
HAND STRAP FOR STREET CARS

(Application filed Dec. 30, 1897.)

(No Model.)



WITNESSES:

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HAND-STRAP FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 607,592, dated July 19, 1898.

Application filed December 30, 1897. Serial No. 664,605. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. SANDS, a citizen of the United States, residing at the city of Newark, in the county of Essex and State of New Jersey, have invented a new and useful attachment to the present hand-straps used in all street-cars and which may be appropriately designated as an Adjustable Hand-Strap for Street-Cars; and I do hereby declare that the following is a full, clear, and exact description of the invention.

All cars used on elevated roads, as well as those used on surface roads, are provided with hand-straps, arranged as follows: Near the top of the car are placed two poles or wooden rods running the full length of the car and supported from the roof by means of suitable brackets. On these rods are placed a number of straps made to form loops, which are intended to be within reach of passengers who are compelled to stand in the aisle, as is the case when the car is crowded. As arranged these straps are about on a line with the seats and must therefore be placed at such a height as to clear the heads of passengers. These straps can be reached readily by people above the average height, but they are beyond the reach of very many people who travel, especially ladies and children, thus compelling them to stand without support, which is both uncomfortable and dangerous. To overcome these objections I provide an adjustable strap which can be drawn down low enough for easy use when required and will return to its former position as soon as released, and which is so arranged with reference to a non-adjustable strap as to be supported thereby when the adjustable strap is extended for use. The mechanism, the function of which is to return the adjustable strap to its normal position when released, is thus relieved from excessive strain and can consequently be made light and of only such strength as is required to lift the weight of the adjustable strap. The resistance of this mechanism is therefore easily overcome when the strap is pulled down.

My invention is illustrated by the accompanying drawings, in which—

Figure 1 is a side elevation showing the adjustable strap at the highest position, as when not in use. The casing containing the mech-

anism which retains the adjustable strap in this position is shown with the end removed in order to exhibit the reel and spring in cross-section. Fig. 2 is a front view. Fig. 3 is a side view showing the adjustable strap drawn down to the lowest position, as when being used. Fig. 4 is a side view of the adjustable strap as arranged to operate by means of a spiral spring, and this view shows the adjustable strap at the highest position. Fig. 5 is a detailed view of the reel, showing the coiled spring and the little strap attached. Fig. 6 shows in detail a peculiarly-shaped spring which can be used in place of the spiral spring.

The adjustable hand-strap is suspended in the usual manner from the wooden bar A. The leather strap B is equivalent to the present hand-strap and forms a loop of the same length as those now in regular use.

The metal casing C, which contains the mechanism for elevating the adjustable strap, consists of a hollow cylinder, the ends of which are closed by circular plates provided with central apertures which form the bearings of a shaft or bolt, and the casing C is provided with suitable lugs or other means of attaching it to the strap B and within the loop formed thereby in manner shown in Figs. 1 and 2.

The clip or slide E, which can also be made in the form of a band or oval ring, encircles the strap B and moves freely up and down thereon. To the outer wall of the clip or slide E is attached a strap F of any suitable material, preferably leather, and forming a loop, as shown.

Inside of the little casing or cylinder C is placed a reel or spool J, which revolves on a central shaft or bolt. This spool or reel is provided at one end with a coiled spring H, one end of the spring being fastened to the reel and the other end to the casing. At the other end of the reel J is attached a strap or cord D. (Shown at Fig. 1 and in detail at Fig. 5.)

The strap or cord D passes out through a slot in the bottom of the casing C, and the lower end of the strap is fastened to the slide E in manner shown in Figs. 1, 2, and 3. When the strap F is at the highest point, as when not in use, the little strap or cord D is wound up on the reel by the tension of the

coiled spring H, thus holding the slide E and adjustable hand-strap F up out of the way in manner shown at Figs. 1 and 2.

When using the adjustable hand-strap, it is only necessary to take hold of the loop F and pull it down by a gentle pressure until the lug N on the slide E reaches the bottom of the larger loop B. When in this position, any amount of strain may be put upon the strap F, as all the pull comes directly upon the main strap B.

Fig. 3 shows the adjustable strap F at the lowest position, as it would be when in use, and in practice is from eight to ten inches lower than the regular hand-straps now in use. The instant that a person lets go of the loop F the tension on the coiled spring H causes the reel to revolve, thus winding up the strap D, which in turn raises the slide E, and hand-strap F, to the high position and holds it there until it is again called into use.

The arrangement of the parts necessary for my adjustable hand-strap, as shown at Figs. 1, 2, and 3, is the most obvious and simple, being the plan I propose to adopt. However, in place of the casing C, reel J, strap D, and coiled spring H a spiral spring could be used for holding the slide E and hand-strap F up out of the way when not in use in manner shown at Fig. 4, B being the present hand-strap, K any suitable support for the spiral spring, L the spring, E the slide, and F the adjustable hand-strap.

Fig. 6 shows in detail a peculiarly-shaped spring which may be used for holding the slide and hand-strap in place of the spiral spring shown in Fig. 4, and it has some advantage over the spiral spring, as it can be extended to greater length with less pull upon the hand-strap, owing to the arrangement of the several coils P, Fig. 6.

All the plans described above and shown on the accompanying drawings should be part of my invention, which having fully described, What I claim, and desire to secure by Letters Patent, is—

1. An adjustable hand-strap which consists of a supporting-strap; a clip arranged to slide thereon, and to which is attached a hand-strap, and means for automatically returning said clip to the upper end of said supporting-strap when said hand-strap is released, substantially as described.

2. An adjustable hand-strap which consists of a supporting-loop; a clip arranged to slide thereon, and to which is attached a hand-strap, and a lug which bears upon the lower end of the supporting-loop when said hand-strap is pulled down; and means for automatically returning said clip to the upper end of the supporting-loop when said hand-strap is released, substantially as described.

3. An adjustable hand-strap which consists of a supporting-strap; a clip arranged to slide thereon, and to which is attached a hand-strap; a reel actuated by a spring and around which is wound a strap, one end of which is secured to said clip which is drawn to the upper end of said supporting-strap by the tension of said spring, when said hand-strap is released, substantially as described.

4. An adjustable hand-strap which consists of a supporting-strap forming a loop upon which slides a clip, to which is attached a hand-strap, and a lug which bears upon the lower end of the supporting-strap when the hand-strap is pulled down; a case secured to the supporting-loop, and within which revolves a reel actuated by a spring, the tension of which winds upon said reel a strap, one end of which is secured to said clip, and raises it to the upper end of the supporting-loop when said hand-strap is released, substantially as described.

Signed at the city of Newark, in the county of Essex and State of New Jersey, this 29th day of December, 1897.

WILLIAM R. SANDS.

Witnesses:

WILLIAM F. DICKINSON,
HARRY J. YATMAN.